Fisheries

Fiscal Year 1999 Annual Report
Region 3

Service Biologist Jim Milligan gives a hands-on demonstration during a fish clinic at DeSoto NWR
-USFWS Photo

Program Description and Mission

The Region 3 Fisheries Program focuses on a broad range of aquatic resource management and aquatic habitat conservation issues, opportunities and partnerships in an eight-state area encompassing 450,000 square miles with a population of over 54 million people. Primary deepwater aquatic resource features include four of the Great Lakes and connecting waters including the St. Mary's River and Detroit River - Lake St. Clair system, and most of the upper Mississippi River Basin, including portions of the Missouri and Ohio Rivers.

The mission of the Service's Fishery Program is to provide the leadership to conserve, restore and enhance aquatic ecosystems and perpetuate their many benefits for future generations. The Fishery Program operates with several national priorities: restoration and management of interjurisdictional fisheries and habitats; recovery of threatened and endangered species; recovery of candidate species; fulfillment of federal mitigation obligations; and providing technical assistance on Service lands and to Native American Governments.

There are 16 fisheries field stations in Region 3; five national fish hatcheries; six fishery resources offices; two fishery coordination offices; two sea lamprey control biological stations; and a fish health center.

National Fish Hatcheries

National Fish Hatcheries in Region 3 develop and maintain brood stocks of selected fish strains, provide technical assistance and sources of fish and eggs to cooperating agencies in pursuit of their aquatic resource management goals, provide fish and eggs for research purposes, stock fish and eggs as part of native fish restoration programs, stock fish in fulfillment of Federal mitigation obligations, and provide refugia for native freshwater mussels.

Fishery Resources Offices

Fishery Resources Offices perform key monitoring and control activities related to invasive aquatic species, survey and evaluate native fish stocks and aquatic habitats to identify restoration opportunities, play a key role in targeting and implementing native fish and habitat restoration programs, work with private land owners, states, local governments and watershed organizations to complete aquatic habitat restoration projects under the Service's Private Lands program, provide coordination and technical assistance toward the management of interjurisdictional fisheries, maintain and operate several key interagency databases, provide technical assistance to other Service programs addressing contaminants, endangered species, Federal project review and hydropower operation and relicensing, evaluate and manage fisheries on Service lands, and provide technical support to 38 Native American tribal governments and treaty authorities.

Fishery Coordination Offices

Fishery Coordination Offices provide crucial facilitation and interagency coordination functions affecting the management of native fishes and aquatic habitats working both independently and through organizations such as the Mississippi River Interstate Cooperative Resource Association (MICRA), Great Lakes Fishery Commission (GLFC) and the Great lakes Indian Fish and Wildlife Commission (GLIFWC).

Sea Lamprey Control Stations

Sea Lamprey Control Stations implement sea lamprey population assessment and control activities throughout the Great Lakes in a program administered through the State Department and the Great Lakes Fishery Commission.

Fish Health Center

The Fish Health Center provides specialized fish health evaluation and diagnostic services to Federal, state, tribal, and private hatcheries in Region 3, conducts extensive monitoring and evaluation of the health status of wild fish stocks throughout Region 3, examines and certifies the health of fish taken from wild stocks for addition to captive brood stocks, and performs a wide range of special services helping to interface the National Fish Hatcheries, Fishery Resources Offices, Fish Technology Centers and outside organizations such as the U.S. Geological Survey providing technical input to the Service's Fishery Program.

Summary of Fiscal Year 1999 Accomplishments

Native Fish Restoration

The Fishery Program's leadership role in restoration of nationally significant native fish stocks continued during 1999. Personnel focused on expansion of self-sustaining lake trout in Lake Superior and efforts to establish self-sustaining populations in Lakes Michigan and Huron. Lake sturgeon restoration activities expanded in Lake Superior, Green Bay of Lake Huron, and the lake Huron - Detroit River - Lake St. Clair - lake Erie areas. Lake sturgeon activities on the Menominee Indian reservation continued and an evaluation of the potential for lake sturgeon restoration in the Ohio River was completed. Native brook trout restoration activities expanded in Lake Superior with further evaluation of the status and restoration potential in northern Lake Huron. Paddlefish restoration work also expanded, with more fish coded-wire tagged, additional radiotelemetry studies in the Mississippi, Illinois, Wisconsin and Chippewa Rivers, fingerling stocking in the Upper Mississippi River, Lower Missouri River and Arkansas-Red River Ecosystems, and full operation of the Mississippi River Tagging Center under agreement with MICRA and it's 28 member states.

Fish Production and Stocking

We continued to operate five national fish hatcheries producing 15 species of fish as part of 131 propagation programs serving Region 3 waters. Region 3 facilities produced over 23 million fish (700,000 pounds) and 55 million eggs during 1999. Our Great Lakes stations produced and stocked over 4 million yearling lake trout as part of restoration programs in Lakes Superior, Michigan, and Huron. Our Iron River, Wisconsin and Hiawatha Forest, Michigan facilities continued to manage extensive lake trout brood stocks. Isolation of fish taken from wild lake trout and brook trout stocks continued at Genoa NFH, Wisconsin.

Private Lands and Watershed Restoration

Fishery Resources Office (FRO) staff at Ashland and LaCrosse, Wis., Alpena, Mich., and Carterville, Ill., lead watershed restoration projects on Whittlesey Creek and Plum Creek, Wisconsin, the Upper Black River and Thunder Bay River, Michigan, Big Darby Creek, Ohio and the Marquette Side Channel - Mississippi River. Our Ashland FRO was instrumental in establishing the Lake Superior Coastal Wetlands Initiative and led effortsd resulting in the establishment of the Whittelesey Creek NWR in northern Wisconsin.

Invasive Aquatic Species Control

Sea Lamprey and the damage they cause to native fish
- USFWS Photo

Our fisheries stations continued to survey Eurasian ruffe and round goby populations throughout the upper Great lakes and to develop and implement control measures. The stage is now set for the installation of an invasive species barrier in the Chicago Waterways in an attempt to stop the spread of harmful species from Great Lakes waters into the Mississippi River Basin; dissapointedly, one round goby was documented downstream of the planned barrier site during the multi agency round goby sampling program organized and led by our La Crosse Fisheries Resource Office. We continued our efforts with the U.S. Coast Guard in managing ballast water exchange in the Great Lakes to eliminate the introduction of new exotic species. Staff continued to monitor the spread of zebra mussel within Region 3, and associated impacts to native mussels; another dissappointing set-back for native aquatic species was documented when mussel sampling efforts within the St. Croix River revealed zebra mussles displacing native mussels. Each of our four large rivers stations continued involvement in surveying the occurrence of Asian carp in the Mississippi River Basin, with heightened concern for the potential introduction of black carp due to an increased interest in producing this species by commercial fish farmers.

Fish Health Operations

The LaCrosse, Wis., Fish Health Center continued its work in evaluating fish health case histories for our national fish hatchery system. The Center collected and examined feral fish from throughout the region for diseases of concern as part of the ongoing national wild fish health survey. The Center also continued their role in conducting training courses to students from federal, state, tribal and commercial agencies, universities and members of the public. The Center continued ongoing efforts to monitor the health status of brood stock and production fish at five National Fish Hatcheries in region 3 and to ensure disease free status of wild fish transferred to Region 3 Hatcheries for addition to brood stocks.

Sea Lamprey Control

The Service's Sea Lamprey Control Program, administered through the State Department and the Great Lakes Fishery Commission (GLFC), is presented in detail in a bi-national annual report to the GLFC. Highlights for 1999 include the Bayluscide treatment of the St. Mary's River, with approximately 300,000 pounds being distributed by air and boat with and assessment of adult and juvenile sea lamprey populations in tributaries and offshore areas in the Great Lakes; treatments for control of sea lamprey in many other Great Lakes streams and the release of sterile male sea lampreys for control purposes continued.

Goals for Fiscal Year 2000

Cultivate Program Growth

Seek opportunities to align fisheries program commitments with regional program strengths and national priorities. Continually refine, upgrade, and develop employee strengths to meet the changing conditions in conservation biology in pursuit of excellence in conservation.

Create special land designations that expand the level of protection for federal trust resources, ensuring their continued existence for future generations (e.g., Whittlesey Creek NWR and Big Muddy NFWR)

Change destructive resource use patterns to sustainable patterns through educating and informing the public on how to protect and conserve aquatic and terrestrial resources on private and public lands (e.g., activities involving the introduction of aquatic nuisance species in the Mississippi basin and Tribal, federal, and state land use practices)

Return lost federal trust resource values to the public domain for both consumptive and nonconsumptive uses (e.g., coaster and resident brook trout)

Identify biologically justifiable concerns for aquatic resource populations experiencing or being threatened by, unsustainable declines in abundance, termed “at risk” for the purposes of this policy guidance (e.g., blue sucker)

Secure the necessary human and fiscal resources needed to expand Service conservation efforts for federal trust resources identified as “at risk” (e.g., lake sturgeon)

Incease Program Efficiency

Strive to eliminate program activities which do not have a direct bearing on achieving national fisheries program priorities and continue rewarding on-the-ground successes made possible through the use of intra-program, cross-program and interagency collaboration.

Streamline overlapping reporting systems (e.g., accomplishment reporting systems, verbal and written informational reports)

Continue the transition to electronic reporting systems using standardized software and data elements

Improve access to fisheries program information (e.g., expand the use of the region’s intranet site for archiving fisheries program briefings such as white papers, issue papers, speeches, and fact sheets)

Expand Program Support

Seek new and innovative ways of marketing the fisheries program's services and products in pursuit of maintaining and expanding effective levels of Congressional, Departmental, federal, state, tribal, and public support for the region 3 fisheries program.

Strategically identify and target under represented constituency groups and develop innovative approaches to communicating our message to them

Develop the capability and dedicate time to present information in a variety of electronic formats (e.g., fisheries program screen savers, internet and VHS fisheries program "video magazines", internet and compact disc professional presentations)

Maintain and whenever possible, increase the number of articles written for magazines (e.g., In-fishermen, Outdoor Life, Fisheries), news papers, bulletins, news letters

Maintain and whenever possible, increase the number of public speaking engagements.

Lake Sturgeon research at Ashland Fishery Resources Office
-USFWS Photo

Fiscal Year 1999 Accomplishments

Black River Restoration Committee Evaluates Road, Stream Crossings For Repair
Alpena Fishery Resource Office
Technician Heather Enterline of the Alpena Fishery Resources Office met with members of the Upper Black River Restoration Committee and the Otsego Road Commission on Oct. 7, 1999, to discuss the repair of the Tin Shanty road/stream crossing. This road/stream crossing is on the main branch of the Upper Black River. During periods of high water this road crossing periodically washes out due to inadequate culverts. The restoration committee plans to replace the culverts with a bridge. The State of Michigan (Pigeon River State Forest) is donating all gravel and topsoil needed, and the Otsego Road Commission is donating heavy equipment and labor needed to install the bridge. The Service has been challenged to contribute $20,000 towards this project. The Alpena Fishery Resources Office (FRO) hopes to meet that challenge through a National Fish and Wildlife Foundation General Fisheries Initiative proposal, submitted Oct. 29. The proposal would also fund a road/stream crossing assessment for the Black River watershed to be conducted in the 1999 field season. The Upper Black River is home to an unadulterated native strain of brook trout and the Federally Endangered Hungerford's Crawling Water Beetle, and is considered to be one of the best brook trout streams in the lower peninsula of Michigan.
Partners include: Otsego Road Commission, Michigan Department of Natural Resources, Pigeon River State Forest, Trout Unlimited, Huron Pines RC&D, Montmorency County Conservation Club, Upper Black River Watershed Restoration Committee. *10/7/98*

Eurasion Ruffe Traps Used in Coaster Brook Trout Project
Ashland Fishery Resources Office
The modified Windermere trap, a collapsible "D" shaped trap measuring .6 meters x 1.2 meters has been used successfully to hold spawning coaster brook trout at Isle Royal National Park. The traps were originally designed by the U.S. Geological Survey-BRD Lake Superior Biological Station for a ruffe pheromone field study. Service staff at Ashland and LaCrosse Fishery Resources Office (FROs) and the Ontario Ministry of Natural Resources are using them to supplement other gear used in ruffe and goby monitoring and general fishery assessment work. This latest use for the experimental traps came about in overcoming the logistics challenges of transporting equipment to Isle Royale, an island national park in Lake Superior. Ashland FRO fishery biologist, Henry Quinlan elected to use the modified Windermere traps due to their small size and easily transportable configuration. The two trap entrances were simply tied shut, submerged in shallow water and became an easily handled holding pen requiring no aeration or treated water. Holding the fish within the natural waterway also helped to reduce stress. Eggs are being collected from Isle Royale coasters for hatchery rearing and later reintroduction to locations where the coaster occurred historically. *10/23/98*

AuSable River Large Woody Debris Project
Alpena Fishery Resources Office
Technician Heather Enterline travelled to Mio, Mich., Oct. 27, 1999, to observe the AuSable River Large Woody Debris Project. The project entailes placing 80 large trees into the AuSable River by helicopter on a stretch of the river previously void of much large woody debris (LWD). Located downstream from the Mio dam, this section of the river has very little mature forest to provide the LWD habitat needed for fish cover and macro-invertebrate production. Trees were placed with the root wad on the shoreline and the crown of the tree angled into the river. The Alpena Fishery Resources Office was responsible for providing a large portion of the funding for this project through a FishAmerica grant. *10/27/98*

Coasters Remain Present in the Salmon Trout River!
Ashland Fishery Resources Office
Fish surveys of Michigan's Salmon Trout River completed in November 1999 confirm that there are still a few large, anadromous brook trout returning from Lake Superior to spawn in the stream. Coasters were once abundant in the Salmon Trout and many other streams

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on the south shore of Lake Superior, but for many years populations have been so low that some biologists doubted that any viable, reproducing stocks still existed in area streams. The surveys done by Ashland Fishery Resources Office (FRO) and volunteers from the Huron Mountains Club were successful in finding and capturing several adult coasters and documented and described the unusual spawning habitats used by these fish. The coasters were tissue sampled before being released and the samples will be analyzed to try to determine the genetic relationship of these fish to other regional populations of brook trout. Partners include: Huron Mountains Club *11/10/98*

Service Assistance Provided to Coaster Brook Trout Study

Ashland Fishery Resources Office

The Red Cliff Tribal Fish Hatchery and Service's Iron River National Fish Hatchery developed a fish marking study to determine the feasibility and retention of oxytetracycline and thermal marks on coaster brook trout otoliths. Ashland Fishery Resources Office (FRO) conducted the marking of fish with oxytetracycline. Red Cliff Tribal Fish Hatchery stocked marked eggs, small fingerlings, and fingerlings into Lake Superior waters adjacent the Red Cliff Reservation during 1998. Ashland FRO provided assistance through fishery surveys to recapture stocked fish in September and November. A total of 65 brook trout were captured of which 41 were held for examination. Recaptured brook trout will be examined to determine if marks are present and the retention of these two marking methods. Lake Superior fish management agencies have recommended marking of brook trout stocked into Lake Superior or its tributaries. Marked brook trout allow managers to identify stocked fish and evaluate restoration efforts. Stocking of early life stages such as eggs and fry require developing new marking techniques for brook trout. If successful, these marking techniques will provide a valuable tool for restoration of coaster brook trout in Lake Superior. Partners include: Red Cliff Tribal Fish Hatchery *11/19/98*

Lake Trout Spawning Operation

Pendills Creek National Fish Hatchery

Captive Lake Trout broodstock are spawned each fall at Hiawatha Forest National Fish Hatchery to provide eggs for the Lake Trout Restoration effort in Lakes Michigan and Huron. Approximately 7,122,000 eggs were taken from 1,300 adult fish. Five genetically distinct strains of Lake Trout are held at this facility for various stocking regimes in the upper Great Lakes region. *11/23/98*

Lake Trout Spawning Assistance

Pendills Creek National Fish Hatchery

Each fall captive lake trout broodstock (adult fish) are spawned to provide a source of eggs for the Lake Trout Restoration Effort. This is a labor intensive task which extends over a six week period. The permanent staff of six Service employees cannot perform this project alone; therefore, help is recruited from various sources. This season three employees assisted from other Service offices and fourteen students volunteered for at least one day each from two local universities in the United States and Canada. In addition, tours of the spawning operation were given to three school groups totaling 138 students and 16 adults. *11/23/98*

Results of Sturgeon Survey Presented at 60th Midwest Fish and Wildlife Conference

Alpena Fishery Resources Office

Fishery Biologist Tracy Hill traveled to Cincinnati, Ohio, to attend the 60th Midwest Fish & Wildlife Conference. Biologist Hill gave a poster presentation titled "Status Survey of Lake Sturgeon in U.S. Waters of Lake Huron." The presentation gave preliminary results of this on-going bi-national, multi-agency lake sturgeon tagging project. Biologist Hill also was co-author on a poster presentation titled "Use of a High Resolution Underwater Video Camera for Fishery Assessment Studies." This presentation detailed how staff at the Alpena Fishery Resources Office (FRO) are using underwater video equipment to assist with lake sturgeon and other fishery assessment projects. The conference provided the Alpena FRO staff an opportunity to interact with fisheries professionals from across the Midwestern United States. Partners include: Ontario Ministry of Natural Resources (Lakes Huron and Erie Management Units), Michigan Department of Natural Resources, 10 Michigan state-licensed commercial Fishers, one tribal commercial fisher, USGS-BRD–Great Lakes Science Center, University of

Michigan, The Ohio State University, and Ohio Division of Wildlife. *12/7/98*

Carterville Biologist Presents Paddlefish Paper at National Scientific Forum

Carterville Fishery Resources Office

Fishery Biologist Greg Conover of the Carterville Fishery Resources Office presented a paper "MICRA National Cooperative Paddlefish Research in the Ohio River Basin" at the 60th Midwest Fish & Wildlife Conference in Cincinnati, Ohio, Dec. 6-9, 1998. The presentation was part of the Ohio River Valley Ecosystem Team Symposium: "Stewardship Through Partnership." The paper summarized the MICRA paddlefish work completed in the Ohio River Basin during the first three years of the national study. Service accomplishments received national attention through the presentation, which demonstrated Carterville FRO's leadership role in a national paddlefish research project. The presentation was also an opportunity for the Carterville FRO to facilitate the dissemination and exchange of scientific information among natural resource professionals. *12/9/98*

Region's Biologists Focus on Ecosystem Approach at St. Louis Training Forum

Region 3

Approximately 220 biologists attended "Biology and the Ecosystem Approach: Putting the Pieces Together,."a training forum for all biologists in Region 3. The four-day forum was held in February in St. Louis, Mo. Forum topics included trust resource overviews, Program overviews, habitat conservation, research, monitoring and data management, population management, adaptive resource management, and challenges facing biologists. Many biologists gave presentations, all focused on the Ecosystem Approach. Partners include: Missouri Department. of Conservation, Colorado State University, Iowa State University. *2/12/99*

PCR Training for Minnesota Biologists

LaCrosse Fish Health Center

Audrey Dikkeboom and Becky Lasee, La Crosse Fish Health Center, Onalaska Wis., provided training (December 14-15, 1998) in Polymerase Chain Reaction (PCR) techniques to three Minnesota Department of Natural Resources biologists. All three biologists were provided hands-on training in using PCR to identify Renibacterium salmoninarum, the causative agent of Bacterial Kidney Disease (BKD). *12/14/98*

Alpena Hosts its Second Annual Fishers Appreciation Dinner

Alpena Fishery Resources Office

Biologist Tracy Hill and Technician Scott Koproski traveled to Midland, Mich. to attend the nd Annual Commercial Fishers Appreciation Dinner. Alpena Fishery Resources Office (FRO) hosted the dinner for Michigan state-licensed commercial fishers that are assisting the Service with lake sturgeon work in Lake Huron. The fishers encounter lake sturgeon as by-catch during their normal fishing operations. The fishers volunteer time to tag and collect biological information on the encountered lake sturgeon. Currently 11 commercial fishers operating 22 boats are participating in the study. John Christian, representing the Regional Office, presented awards and tokens of appreciation to each of the fishers present at the dinner Partners include: Michigan Department of Natural Resources and 10 Michigan state-licensed and one tribal commercial fishers. *12/14/98*

Spawning Operation at Hiawatha Forest National Fish Hatchery

Hiawatha Forest National Fish Hatchery

The Hiawatha Forest National Fish Hatchery maintains five genetically distinct strains of Lake Trout and one strain of Coaster Brook Trout. The fish are spawned each Fall and eggs are used to support the Lake Trout Restoration effort along with other high priority Programs. This year approximately 5.5 million eggs were shipped to five national fish hatcheries and three research cooperators. *12/21/98*

Cooperative Lake Trout Genetics Project Evaluates Genetic Markers

Hiawatha Forest National Fish Hatchery

The Hiawatha Forest National Fish Hatchery maintains five genetically distinct strains of Lake Trout and one strain of Coaster Brook Trout. A cooperative genetics project with researchers from Michigan State University was completed this Fall which will evaluate molecular genetic markers between captive

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strains. A small one centimeter clip was removed from the tail of the fish to provide the sample for the lab. This is a non-lethal genetic sampling technique which causes no harm to the fish. Various crosses were also made in the hatchery to provide offspring for analysis. This mixed strain analysis will provide background data which may be used to determine crosses in the wild naturally reproducing populations. *12/21/98*

Lake Herring Literature Review Summarized

Ashland Fishery Resources Office

In response to fishery management agencies concern about lake herring population structure and poor recruitment in Lake Superior, a literature review on several corregonid species was conducted. The review examined factors affecting year class strength and variation throughout their range in an attempt to better understand population dynamics in Lake Superior. A summary of the literature reviewed was presented to the Lake Superior Technical Committee at their January 1999 meeting. Existing literature suggests that both abiotic and biotic factors contribute to substantial variation in lake herring year class size. No single or set of parameters was identified that could provide managers with predictive capabilities or insight into future year class strength. Studies often showed conflicting reasons for variation in year class size. For undetermined reasons Lake Superior stocks showed some of the highest variation in year class size. Partners include: U.S. Geological Survey–Biological Resources Division, Lake Superior Biological Station, Michigan Sea Grant. *1/13/99*

Fish Passage Coordinators Meet

Alpena Fishery Recources Office

Fishery Biologist Hill traveled to Washington, D.C., to attend the Fish Passage Coordinators meeting. The purpose for the meeting was to develop a nation-wide Geographic Information System (GIS) database that will help formulate a systematic approach to addressing fish passage issues with the best available information. As Region 3's fish passage coordinator, Hill participated in the meeting which focused on development of the structure for this database. Once the nation-wide database is completed it will be provided to each regional coordinator. Regional coordinators will then work within their regions to verify database layers and include additional layers important at the regional level. The database should ultimately allow the Service to inventory, prioritize and record accomplishments on fish passage projects. *1/20/99*

Fish Health Volunteers Recognized

LaCrosse Fish Health Center

Volunteers of the La Crosse Fish Health Center were recognized on Jan. 22, 1999, at a Volunteer Banquet at the U.S. Fish and Wildlife Service Resource Center in Onalaska, Wis. Offices hosting the banquet included the La Crosse District Office (Upper Mississippi Wildlife and Fish Refuge), La Crosse Fishery Resources Office and the La Crosse Fish Health Center. Janet Beitlich, La Crosse Fish Health Center, presented certificates and volunteer gifts to nine volunteers (four in attendance at banquet) for a total of 719 volunteer hours. Volunteers contributing the most hours included University of Wisconsin-La Crosse undergraduate biology students, Brian Trewyn, Peggy Stelzig and Brian See. *1/22/99*

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Lake Sturgeon Age Interpretation Workshop

Alpena Fishery Resouces Office

The Alpena Fishery Resources Office (FRO) and the Office of Federal Aid co-hosted a lake sturgeon age interpretation workshop in Sarnia, Ontario. The workshop was instructed by Dr. John Casselman from the Ontario Ministry of Natural Resources Glenora Research Station. The purpose of the workshop was to introduce Calcified Structure Analysis Software (CSAS). This computer software was developed by Dr. Casselman and his associates to standardize methodologies used to interpret the age of fishes from their calcified structures. Standardization of techniques for collection and preparation of lake sturgeon fin rays and the methods used to interpret lake sturgeon ages were discussed in detail. The workshop was attended by biologist and researchers from across the Great Lakes. Partners: Federal Aid, Green Bay FRO, Ashland FRO, Lower Great Lakes FRO, La Crosse FRO, Marquette Biological Station, Michigan Department of Natural Resources, Ontario Ministry of Natural Resources, Ontario Commercial Fishers

Association, Wisconsin Department of Natural Resources, USGS-Biological Research Division-Great Lakes Science Center, and Michigan Technological University. *1/25/99*

Introduction to Fish Health Management Course

LaCrosse Fish Health Center

Staff of the La Crosse, Fish Health Center, Onalaska Wis., in cooperation with the National Training Center (Shepherdstown, W. Va.) presented the course, "Introduction to Fish Health Management," in Onalaska on Feb. 1-5, 1999. This was the 30th offering of the course by the Center. The fifteen students enrolled in the course learned microscope use, identification of parasitic, bacterial and viral pathogens, chemical calculation and drug treatments, sample shipping, and more. The course is intended as an introductory course for fish culturists, hatchery biologists, field biologists and others with an interest in fish health. Another course will be presented in March 1999. *2/1/99*

Service Sponsors Student

Alpena Fishery Resources Office

Alpena FRO sponsored a Hillman High School student, Jason Jourmean, on February 2, for National Groundhog Job Shadow Day. Jason spent the morning with Alpena FRO staff learning the various activities of the FRO. Technician Koproski gave Jason a tour of the lab, and showed Jason how to age fish through scales and otoliths. Technician Enterline discussed education levels needed, and types of classes to take in order to become a fisheries biologist. Jason showed a lot of interest in Service activities, and is planning on assisting the FRO with activities in the 1999 field season as a volunteer. *2/2/99*

Quality Fish Produced for Lake Trout Restoration

Pendills Creek National Fish Hatchery

The Pendills Creek National Fish Hatchery provides 700,000 Lake Trout averaging five to six inches for stocking in the Great Lakes each year. This year the fish will be stocked on sites in Lakes Michigan and Huron. The stocking sites have been selected based on criteria which provide for the best chances of survival leading to eventual restoration of the species. Three quality checks are performed on the fish during the rearing cycle. The second check was completed in February. Fish quality parameters checked include fin and gill observations and quantity of fat reserves. Results are used to guarantee that the best possible fish are provided for the Lake Trout Restoration effort. Two fisheries students from Soo College in Ontario, Canada, assisted with the two day analysis. *2/26/99*

Service Fisheries Biologist Presents Paper on Lake Michigan Ecosystem Management to Wisconsin DNR

Green Bay Fishery Resources Office

Rob Elliott, fishery biologist with the Green Bay Fishery Resources Office (FRO), was invited to present a paper at the 1999 Wisconsin Fisheries Management and Habitat Protection Statewide Training conference Eau Claire, Wis., March 2-4, 1999. The topic of his presentation was the interactions between stocked salmonines and their forage in a special session on Lake Michigan Ecosystem Management. The four presentations given as part of the session provided a comprehensive examination of the interactions between the various aquatic trophic levels in Lake Michigan from phytoplankton-zooplankton relationships up through the top predator fish and the effects that past and present management actions have on this system. The conference was sponsored by the Wisconsin Department of Natural Resources. *3/3/99*

Great Lakes' Ruffe Control Working

Ashland Fishery Resources Office

From 1995 to 1998, surveillance activities conducted by Ashland, Alpena, and Lower Great Lakes Fishery Resources Offices (FROs), the Ontario Ministry of Natural Resources, and cooperating agencies continued to find no range expansion by ruffe in the Great Lakes according to the 1998 Eurasion Ruffe Surveillance Report. Increases in ruffe abundance were observed in some interior locations within the ruffe range and in all peripheral locations during 1998.

Total reported surveillance effort in 1998, both dedicated and incidental, consisted of nearly 91 hours bottom trawling, 4,699 trapnights, 10 nights gillnetting, 17 hours larvae netting, 85 seine hauls, and 2.42 hours electrofishing; this effort resulted in a total catch of 13,844 ruffe, all within the known ruffe range.

In Lake Huron, ruffe were still only found near Alpena, Mich..

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No ruffe have been found in Lake Erie or Lake Ontario. Ruffe have migrated as far as 30 kilometers interior from the mouth of the Bad River to a dam on the White River in Wisconsin. However, no ruffe have been found in waters unconnected to the Great Lakes.
The goal of the ruffe control Program is to prevent or delay the further spread of ruffe through the Great Lakes and prevent their spread to other inland lakes and watersheds. Other contributors to the surveillance report include Marquette Biological Station-Sea Lamprey Control; U.S. Geological Survey-Biological Resources Division; Lake Superior Biological Station; Michigan and Wisconsin Departments of Natural Resources; Great Lakes Indian Fish and Wildlife Commission; the Bad River Band of Chippewa Indians; Michigan Technological University, and many sport anglers. *3/22/99*

Sturgeon Enhancement Committee Meets
LaCrosse Fishery Resources Office
The Menominee Reservation Lake Sturgeon Enhancement Committee met on March 18, 1999 in Keshena, Wisconsin. The committee reviewed last years accomplishments, including reintroduction of nine adult sturgeon in Fiscal Year 1998 and the data collected on the habitat use and behavior of reintroduced sturgeon. Action items for this year's work were identified and assigned with deadlines. The activities of the committee are part of the Menominee Reservation Lake Sturgeon Management Plan, a multi-agency plan developed by the committee. *3/18/99*

Fish Production Covers for Lake Trout
Pendills Creek National Fish Hatchery
The Pendills Creek National Fish Hatchery provides 700,000 Lake Trout, averaging five to six inches, for stocking in the Great Lakes each year. After fish reach approximately two inches in length they are moved to outdoor rearing units (raceways). These raceways are supplied with oxygen rich gravity flow creek water. The project recently completed consisted of installing permanent aluminum raceway covers over twelve of the sixteen raceways. The covers provide protection from direct sunlight, which promotes eye cataract development and sunburn, on the backs of the fish. Overall, the shade from the covers provides for higher quality fish as the fish tend to feed much better in low light conditions. Bird predation, which is a serious problem at many fish hatcheries, is also minimized with properly constructed raceway covers. 3/31/99

Spring Wild Fish Health Assessments
LaCrosse Fish Health Center / Genoa National Fish Hatchery
On March 29, April 6, and April 9, 1999, Audrey Dikkeboom, Ken Phillips, John Whitney, Becky Lasee and Rick Nelson of the La Crosse Fish Health Center collected health samples from 445 fish representing 23 different species in Pool 9, of the Upper Mississippi River. Center staff appreciated the assistance from Todd Turner, Dan Kumlin and Jeff Lockington of the Genoa National Fish Hatchery in collection of the fish. Pending completion of laboratory assays, results will be entered into the National Fish Health Database (*3/30/99*

New Web Site Created for LaCrosse Fish Health Center
LaCrosse Fish Health Center
Terry Ott and Becky Lasee of the La Crosse Fish Health Center, Onalaska, Wis., assisted Yvonne Hawkins, Computer Specialist, Division of Fish & Wildlife Management in developing a web site for the LaCrosse Fish Health Center. The web site has already had numerous visitors and is accessible via the Internet at fws.gov/r9af/lacrosse.htm. *3/30/99*

Middle School Demonstration
LaCrosse Fish Health Center Becky Lasee and Audrey Dikkeboom, Fishery Biologists, LaCrosse Fish Health Center, Onalaska, Wisconsin , participated in an Environmental Workshop for middle school students (grades 6-8) at Milrose-Mindoro Middle School, Mar. 11, 1999. Approximately 50 students participated, learning about Mississippi River fish and wildlife. *3/30/99*

Center Staff Inspect Region's Fish Hatcheries
LaCrosse Fish Health Center
The La Crosse Fish Health Center conducted annual spring fish health inspections at the National Fish Hatcheries in Region 3. On Mar. 22-23, 1999, Audrey Dikkeboom, Brian Trewyn and Peggy Stelzig sampled three lots of fish at the Genoa National Fish Hatchery, Wis., and four lots at the Isolation Facility. On Mar. 23-24, 1999, Terry Ott and Ken Phillips performed health

inspections of 22 lots of fish at the Iron River National Fish Hatchery, Wis. On April 6-7, 1999, Audrey Dikkeboom and Becky Lasee performed health inspections on 12 lots and fish health quality assessments on seven lots of production fish at the Jordan River National Fish Hatchery, Elmira, Mich. *3/30/99*

Service Finds Rare Pallid Sturgeon in Lower Missouri River

Columbia Fishery Resources Office

Five state and federal agencies are participating in a cooperative effort to locate the endangered pallid sturgeon in the Lower Missouri and Middle Mississippi Rivers. Information on the pallid sturgeon life history and habitat use is limited. Data collected in this project will provide information to enhance habitat and to be used in consulting with the Army Corps of Engineers on river operations. Columbia Fishery Resources Office caught 4 wild pallid sturgeon and one young stocked pallid. Seven young fish stocked by the Missouri Department of Conservation were collected in the Middle Mississippi River. Partners include: Nebraska Game and Parks, Iowa Department of Natural Resources, Missouri Department of Conservation, Southern Illinois University, Long Term Resources Monitoring Program - Missouri *3/30/99*

Service Career Opportunities on Display at Tribal Career Fair

Ashland Fishery Resources Office

Frank Stone was invited to attend a "Career Fair" at the Lac Courte Oreilles Community Collage (LCO Indian Reservation). The event was hosted by the American Indian Science and Engineering Society. Frank was able to assemble a great deal of information from the Region 3 web pages regarding employment opportunities with the US government as well as career options with the Service. *3/30/99*

LaCrosse Staff Conduct Walleye Population Estimates for the Ceded Territory of Wisconsin

LaCrosse Fishery Resources Office

From mid-April to mid-May 1999, the LaCrosse Fishery Resources Office (FRO) assisted the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and Ashland FRO with walleye population surveys on more than 20 lakes in northern Wisconsin (Ceded Territory of Wisconsin.) Surveys are conducted during the spawning season, which occurs usually during a three week period after the ice leaves the lakes. Night electrofishing is the method used to sample walleye and a mark/recapture technique is used to estimate populations. The population estimates help managers make sound management decisions and set safe harvest levels. The Wisconsin DNR also conducts numerous population surveys, coordinating with Great Lakes Indian Fish and Wildlife Commission (GLIFWC) on which agency will work on certain lakes. Partners include: GLIFWC and Wisconsin DNR. *4/26/99*

Ashland Staff Presents Results of Ruffe Reduction Experiment

Ashland Fishery Resources Office

In August, 1998, Ashland Fishery Resources Office (FRO) conducted a follow-up experiment to test the effectiveness of bottom trawling in removing isolated colonies of Eurasion ruffe. Details of this experiment were given in a 20 minute oral presentation at the 3rd Annual Chequamegon Bay Natural Resources Conference, March 2-3 in Ashland, Wis. The experiments occurred at two sites in Chequamegon Bay, Wis.. At one site, ruffe movement was restricted by close proximity to shoreline and unfavorable habitat. At the other site, ruffe movement was unrestricted. Statistical analysis revealed that nearly the entire ruffe colony was removed at the site where their movement was restricted, while no significant reduction was achieved in the colony where movement was unrestricted. Posters describing this experiment were also presented at the 9th Annual International Zebra Mussel and Aquatic Nuisance Species Conference, April 25-29 in Duluth, Minn. Partners include: Bad River Tribal Natural Resources Department, Wisconsin Department of Natural Resources and Northland College. *4/30/99*

Lake Trout Fry Planting in Northern Lake Huron

Alpena Fishery Resources Office

Several Region 3 offices collaborated to stock 200,000 lake trout fry at Spectacle Reef in northern Lake Huron. Staff from Iron River, Pendills Creek and Jordan River National Fish Hatcheries, and the Alpena Fishery Resources Office combined efforts to accomplish this experimental lake trout fry stocking with use of the M/V Togue. Eggs for the experiment were supplied and incubated at Pendills Creek NFH. Thermal manipulation was employed during incubation to apply a distinct marking pattern on the otoliths so the fish can be identified if captured during subsequent lake trout assessment surveys. A high resolution underwater video camera was used to select appropriate habitat and evaluate condition of the stocked fry. Biologist and technicians from the Alpena Fishery Resources Office designed the camera setup and operated it during stocking. While monitoring the fry stocking with the video camera, suitable fry habitat was identified and the lake trout fry could be seen taking refuge upon release. A similar fry stocking was conducted at Mordmere Reef in Lake Huron in April 1998. *4/30/99*

Pendills Creek Hatchery Marks 741,405 Lake Trout

Pendills Creek National Fish Hatchery

Lake Trout are marked by a finclip each year prior to spring stocking to differentiate hatchery raised fish from wild fish. Hatchery staff at Pendills Creek National Fish Hatchery commenced marking of approximately 741,405 fingerling Lake Trout for release into Lake Michigan and Lake Huron in support of the Great Lakes Lake Trout Restoration Initiative. Each year the marking project begins in early March and generally runs until the end of April prior to spring stocking. Seasonal employees are hired to mark the fingerlings by clipping certain fins which are established for each year class of fish. The lake trout that are clipped vary in size and can be anywhere from four to five inches in length. The clip assists scientists in identifying lake trout age classes, rearing locations, migration patterns, and to calculate survival rates. Approximately 860 hours were expended by hatchery staff to complete this project. *4/30/99*

FRO Staff Conduct Diagnostic Laboratory Techniques Class

LaCrosse Fish Health Center

On April 28, Audrey Dikkeboom and Becky Lasee taught a laboratory techniques class at the *LaCrosse Fish Health Center*, Onalaska, Wisconsin, to seven students from the University of Wisconsin-La Crosse. The students are currently enrolled in the course, Aquatic Animal Health. The laboratory provided training on immunological techniques (e.g., ELISA AND DFAT) used to identify bacterial pathogens of fish. Two of the students will be doing volunteer work at the center this summer. *4/30/99*

Service Assists Tribes With Spring Walleye Count

Ashland Fishery Resources Office

As part of a five-year Memorandum of Understanding, signed between the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and the Service, the Ashland Fishery Resources Office provided two electrofishing boats and crew leaders for spring walleye assessment projects. The objectives were to estimate populations of adult walleye in lakes of northern Wisconsin and Minnesota. The adult population estimates are used to set safe harvest levels, on which tribal harvest quotas are based. This year's assessment activity was assigned to Frank Stone and Marty Soulier. The survey covered a three-week period and resulted in population surveys being completed on 10 lakes. The sampling procedures involve extensive work during the evening hours. This is the period when spawning activity is the greatest and thus provides for the best opportunity to collect large numbers of fish. Normally 3-5 nights of fish collection are needed on each lake to provide sufficient data so a population estimate can be made. *4/30/99*

Poster Presentation at Mississippi River Consortium

LaCrosse Fish Health Center

Staff from the LaCrosse Fish Health Center attended the 31st annual meeting of the Mississippi River Research Consortium, April 22-23, 1999. Staff presented, "Health Assessments of Wild Fish in the Midwest," a poster presentation outlining objectives and results

of the wild fish health surveys in Region 3. Numerous contacts were made with resource managers in the upper Midwest for doing joint sampling work. *4/30/99*

Diagnostic Laboratory Techniques Class

LaCrosse Fish Health Center

On April 28, Audrey Dikkeboom and Becky Lasee presented a program at the LaCrosse Fish Health Center (Onalaska, WI) to seven students from the University of Wisconsin-La Crosse enrolled in the course, Aquatic Animal Health. The laboratory provided training on immunological techniques used to identify fish bacterial pathogens. Becky Lasee serves as a co-instructor for the course. Two of the students enrolled in the course will be doing volunteer work for the fish health center this summer. *4/30/99*

First Fish Health Newsletter Distributed

LaCrosse Fish Health Center

On April 19, Terry Ott and Jan Beitlich co-edited the first "Fish Health Newsletter" for the LaCrosse Fish Health Center, Onalaska, Wis. The newsletter will be distributed quarterly and will cover topics pertaining to fish health management in the Great Lakes/Big Rivers Region and current activities at the center. Approximately 200 copies of the first issue were distributed to state, private, federal and congressional offices. *4/30/99*

Pendills Creek NFH Marks 741,405 Lake Trout

Pendills Creek National Fish Hatchery

Fish are marked by a finclip each year prior to stocking to differentiate hatchery raised fish from wild fish. Hatchery staff at Pendills Creek National Fish Hatchery started marking of approximately 741,405 fingerling Lake Trout for release into Lake Michigan and Lake Huron in early March through the end of April prior to spring stocking. Seasonal employees are hired to mark the fingerlings by clipping certain fins which are established for each year class of fish. The lake trout that are clipped vary in size and can be anywhere from four to five inches in length. The clip assists scientists in identifying lake trout age classes, rearing locations, migration patterns, and is used to calculate survival rates. Approximately 860 hours were expended by hatchery staff to complete this project. *4/30/99*

Exotics Study Pits Eurasion Ruffe vs Round Goby

Ashland Fishery Resources Office

Eurasian ruffe and the round goby, two nuisance exotic fish introduced to the Great Lakes, will soon square off in an interaction study conducted by the Great Lakes Science Center (GLSC), Ann Arbor, Mich.. Proposed by Tom Busiahn, project leader at the Service's Ashland Fishery Resources Office (FRO), the study was one of several projects accepted by the Region 3 research committee for the 1999 Quick Response funding program sponsored by U.S. Geological Survey's Biological Resources Division. The study will help to predict the ecological effects of these two invasive species where they exist together (presently, the Duluth-Superior harbor in Lake Superior; near Alpena, Mich., in Lake Huron; and eventually to most of the Great Lakes). The study may also provide some insight leading to control options. Ashland FRO used bottom trawling to collect 250 ruffe from the Superior,Wis., harbor for this study. There were only two fish mortalities during the trip to Ann Arbor, Mich.. GLSC will collect the goby opponents by hook and line from occupied waters near Ann Arbor. *5/18/99*

Chequamegon Bay Zebra Mussel Task Force Formed to Address Threat to Native Resources

Ashland Fishery Resources Office

In the wake of startling news that hundreds of zebra mussels were discovered clinging to the hull of a commercial barge overwintering in Chequamegon Bay, Wis. the Bad River Tribal Natural Resources Department called for a meeting to discuss ways to have the mussels cleaned from the hull or have the barge removed from the Bay. Although occurring in the Bay, zebra mussels have not proliferated due to low calcium levels and cold winters. However, the last two winters have been relatively mild, and calcium levels at times during the summer do approach levels conducive to zebra mussel

Continued next page.

reproduction. The tribe is concerned that this latest introduction will lead to proliferation of zebra mussels within the Bay and threaten wild rice and native mussels on adjacent tribal waters. At the first meeting, it was decided to form a multi-agency task force to prevent future introductions and to assess the need for zebra mussel monitoring activities in the Bay. Staff from Ashland FRO and the Great Lakes Indian Fish and Wildlife Commission were appointed to co-chair the new task force. The Bad River tribe desired to initiate zebra mussel monitoring within tribal waters; Ashland FRO constructed and supplied the tribe with adult monitoring devices designed by Mary Balsar, University of Wisconsin-Superior. Partners include: Great Lakes Indian Fish & Wildlife Commission, Bad River Band of Lake Superior Chippewa, Wisconsin Department of Natural Resources, Bureau of Indian Affairs U.S. Geological Survey-Biological Resources Division, Northern States Power City of Ashland, Wis. and National Park Service. *5/13/99*

LaCrosse Fishery Resources Office Assists With Regional Fishing Day Activities

LaCrosse Fishery Resources Office

LaCrosse Fishery Resources Office (FRO) co-sponsored the Tomah (Wis.) Veterans Administration Hospital's Fishing Day May 19, 1999. Approximately 100 patients participated, trying their luck at catching a rainbow trout or largemouth bass as stocked by Genoa National Fish Hatchery. LaCrosse FRO also assisted with Fishing Day events at the Upper Mississippi, Minnesota Valley and Necedah NWRefuges. Hundreds of kids and adults participated; improving both their fishing skills and their knowledge the aquatic world. Partners include: Upper Mississippi Refuge-Winona District; Genoa National Fish Hatchery; Tomah Veterans Administration Hospital; American Legion of Wisconsin; Tomah, Wis., Middle School and volunteers. *5/19/99*

Alpena Fishery Resources Office Presentation at Camp Chickagomee

Alpena Fishery Resources Office

Biologist Hill and Technician Enterline gave an educational presentation to Mike Baarlaer's fifth grade class at Camp Chickagami, May 25, 1999. Camp Chickagami is situated on Lake Esau (Presque Isle County, MI). Biologist Hill presented fisheries sampling gear, discussed fish morphology and physiology, and talked about careers in fisheries. Technician Enterline discussed exotic species present in the Great Lakes, and displayed sea lamprey, ruffe, goby, rusty crayfish, and zebra mussels. Approximately thirty students were in attendance as part of a year end outdoor educational Program. The students attend Lincoln Elementary School in Alpena, Michigan. *5/30/99*

Cedar Ridge Elementary Career Path Day

Columbia Fishery Resources Office

Technician Finley presented a slide show and answered questions by 2nd through 5th grade students at Cedar Ridge Elementary School. Finley visited the school last year and represented careers in natural resources during the school's career day. The school asked that the presentation focus on a typical work day, educational requirements, likes, dislikes and advice for persons interested in a career in natural resources. *5/30/99*

Fish Health Inspection at Pendills Creek National Fish Hatchery

Pendills Creek National Fish Hatchery

A semi-annual fish health inspection of the Pendills Creek/ Hiawatha Forest National Fish Hatchery complex was completed in May by the LaCrosse Fish Health Center. This laboratory is equipped to identify fish viruses, bacteria, parasites, and other environmental and nutritional diseases. The fish health inspection consisted of taking tissue samples from a small number of fish at the hatchery and screening the samples for certifiable viral, bacterial, and parasitic fish pathogens. The fish health inspections insure that diseases are not spread to wild fish populations. Results of the May inspection indicated that our captive stocks are free from any certifiable diseases. *5/30/99*

Topeka Shiner Recovery Team Sets Action Items

LaCrosse Fishery Resources Office

The Initial meeting of the Topeka Shiner Recovery Team was held and several action items were accomplished. Team roles and responsibilities were identified, a recovery goal was

adopted using current information. The status of the Topeka Shiner was presented as was biology, management activities and research. A bibliography is being prepared by Dr. Hatch and will be reviewed and amended by the team. Partners include: Minnesota Department of Natural Resources-Rich Baker, U of M-Dr. Jay Hatch, Miss. Dept. of Conservation-Harold Kerns, South Dakota Dept. of Game, Fish and Parks-Dave Lucchesi, Iowa DNR-Kim Bogenschutz, George Cunningham-Eco-Centrics, Inc., Kansas Dept. of wildlife and Parks-Chris Mammoliti, Reg 6 Kansas Field Office-Veron Tabor and Linda Drees. *5/30/99*

Round Goby Angling Survey at Shiawassee NWR

Alpena Fishery Resources Office

Alpena Fishery Resources Office coordinated an angling survey to look for the exotic round goby in waters of the Shiawassee NWR in Saginaw, Mich. The goby is an aggressive invader fish species that is thought to compete with native fish for food and habitat, and pose a potential threat to refuge trust fishery resources. Goby are present in waters upstream and downstream from the refuge, but their status on the refuge was unknown. Twenty-seven volunteers from local conservation clubs cooperated in the survey. No round goby were captured. The Saginaw News printed an article on the event in its Sunday, May 2, 1999 edition. *5/30/99*

Ashland Staff Assists Lac Vieux Desert Tribal Fish Hatchery

Ashland Fishery Resources Office

The Lac Vieux Desert (LVD) hatchery Program is a newcomer to the business of hatching fish. The tribe started its walleye fish hatchery Program in 1992 , and have continued to collect walleye eggs during the tribe's annual spearing harvest . The Ashland Fishery Resources Office has provided fish hatchery technical assistance that has helped staff members to construct a new fish hatchery facility plus operate a fry rearing Program. A successful rearing cycle this year resulted in the hatching of 450,000 fry. Frank Stone assisted the Tribe with the routine care of the eggs and chemical treatments to stop the spread of fungus. Frank also assisted with the release of 400,000 walleye fry in LVD Lake plus an additional transfer of 50,000 fry that will be held over in a earthen pond for an extended growth Program. Production capabilities at the LVD hatchery are approximately 1.3 million walleye eggs each year. Walleye fry are currently stocked in area lakes surrounding the reservation that were used during spring spearing. Future plans call for construction of rearing ponds to raise the fry to fingerling size and expansion of the hatchery facility to increase production capabilities. Indian communities have traditionally depended on a healthy and abundant fishery for subsistence. Today, the importance of the Great Lakes and inland fisheries to tribes is reflected in the growth of tribal hatcheries throughout the Great Lakes region and the subsequent re-stocking efforts. The prevalence of new hatchery operations and the expansion of existing facilities indicates that a healthy fishery and commitment to the resource is high on the tribes' priority list. *5/30/99*

Great Lakes' Sea Lampreys Destroyed, Lake Trout Saved

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. Since May 1999, 15 tributaries to the Great Lakes have been treated with lampricide, destroying about 1.15 million larval sea lampreys. Included in this total are about 28,600 larvae that would have transformed into the parasitic phase and entered the Great Lakes this year. Each parasitic phase sea lamprey is capable of killing upwards of 40 pounds of fish during its year long parasitic phase. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4 billion.Since Tributaries treated included one in Lake Superior, nine in Lake Michigan, two in Lake Huron and three in Lake Erie.. *7/14/99*

LaCrosse FRO, Park Service Monitor Zebra Mussels in St. Croix River

LaCrosse Fishery Resources Office

A week-long zebra mussel monitoring effort coordinated by the LaCrosse Fishery Resources Office (FRO) and the National Park Service was completed on the St. Croix River June 25, 1999. More than 700 boats were inspected by divers with evidence of the mussels found on only two boats. These boats were lifted and cleaned. Zebra mussels were also found in the lower river on native mussels. This is significant, due to the importance of this river's native mussel populations. The St. Croix river borders Minnesota and Wisconsin. Other partners include: National Park Service-St.Croix Scenic Riverway, Minnesota/Wisconsin Boundry Area Commission, Minnesota and Wisconsin Departments of Natural Resources, Great Lakes Indian Fish and Wildlife Commission, U.S. Coast Guard, Northern States Power and U.S. Army Corps of Engineers. *6/25/99*

Carterville FRO Supports DoD Natural Resources Management Program

Carterville Fishery Resources Office

During Fiscal Year 1999 Carterville Fishery Resources Office (FRO) conducted fish/fauna population surveys of Lake Greenwood, on the U.S. Navy's Crane Weapons Support Center in Indiana. Service staff from Carterville FRO have assisted the Navy's with its natural resources management program at the center for the past 10 years. Fish management at the Center is a cooperative effort between Crane, the Service, and the State of Indiana. This activity is authorized by a cooperative agreement between the Department of Defense and the Service, and is funded under a reimbursible agreement with Crane Naval Weapons Support Center. Recommendations are based on the results of annual spring surveys of the lakes fish fauna. Recommendations in Fiscal Year 1999 include placement of artificial fish shelters and stocking walleye fingerling. *6/8/99*

Kentuck Lake - Walleye Restoration Project

Ashland Fishery Resources Office

he objective of this recovery effort is to restore the natural recruitment of walleye in Kentuck Lake in northern Wisconsin. This effort includes the use of milt collected from walleye at nearby Butternut lake to fertilize the eggs collected from Kentuck Lake females. The resulting walleye fry and fingerlings will then be stocked back into Kentuck Lake. In addition to the Service, this project also involves the efforts of the Red Cliff, Mole Lake and Lac du Flambeau Tribal Fish Hatcheries and the Genoa National Fish Hatchery (NFH). All the agencies involved have had an important part in the planning and development of this project. For several years the number of male walleye in Kentuck Lake have been dwindling. The reason for this decline and poor recruitment have remained a mystery. This walleye fishery is very important to the Tribal members that have utilized this resource for many years. The objective of this recovery effort is to restore the natural recruitment of walleye in Kentuck Lake. The activities that have been initiated thus far include: The GLIFWC is the primary resource agency involved with this walleye restoration project and has been involved in every stage of its development. Once the fry and fingerlings are ready for transfer, the GLIFWC will provide the staff and equipment to pick up the fish and deliver them to Kentuck Lake. The GLIFWC has also purchased oxytetracycline (OTC) that will be used as a means to mark the fish for later identification Because male walleye were not available from Kentuck Lake, the Ashland Fishery Resources Office collected milt from 75 walleyes collected at Butternut Lake. The milt was used to fertilize the eggs collected from Kentuck Lake females. Frank Stone has been issued an INAD permit to use OTC and has coordinated this phase of the marking Program. Red Cliff and Mole Lake Tribal Fish Hatcheries - Provided the staff and equipment for the first two weeks of egg incubation until the eggs began to hatch. At this time the four day old fry were shipped to other cooperating agencies. Genoa NFH and Lac du Flambeau Tribal Fish Hatchery - These facilities will provide the pond rearing space until the fish reach 2-6 inches of length. At this point the fingerlings will be shipped to Kentuck Lake. This walleye restoration effort may take several years until natural recruitment levels begin to

increase. The GLIFWC, USFWs and the many Tribal resource agencies involved with this effort are committed to monitoring this resource in hopes of bringing the walleye back to Kentuck Lake. *5/30/99*

New Fishery Biologists Increase Reach of Carterville Fishery Resources Office

Carterville Fishery Resources Office

The Carterville Fishery Resources Office strengthened its staff by adding two new fishery biologists in Fiscal Year 1999. Chad Stinson, a one-year term employee, joined the staff March 21, 1999. Greg Conover, a permanent employee, joined the staff June 6. The addition of two fishery biologists improves the offices capability to actively manage the regions aquatic resources. Chad Stinson is working on a biological assessment of the Kankakee River drainage, a pallid sturgeon survey on the lower Ohio River, and SIKES Act fishery management activities. Greg Conover manages the MICRA National Paddlefish Database and Coded-Wire Tag Processing Center, conducts inspections for the Service's Triploid Grasscarp Inspection/Certification Program, and conducts fishery management activities on waters owned by the Department of Defense. *6/6/99*

Alpena FRO Teams With Regional Partners For Goby Roundup in Chicago

Alpena Fishery Resources Office

Staff from Alpena Fishery Resources Office (FRO) operated a bottom trawling vessel in downtown waterways during the annual Round Goby Round-up held June 11,1999, in Chicago, Ill. Alpena staff worked with LaCrosse FRO and Army Corps of Engineers staff in a boat provided by Ashland FRO to conduct bottom trawling activities in downtown areas of the Chicago Shipping and Sanitary Canal. Round goby were captured by bottom trawling in the turning basin, just inside the river from the lock from Lake Michigan. Round goby were also discovered in the river one-quarter to one-half mile downstream from the lock. The discoveries show an advancement in round goby range as none were found during the same survey in the same areas in 1998. The event is coordinated by LaCrosse FRO. The annual Goby Roundup helps determine the current range and spread of the round goby in downtown areas of the Chicago Shipping and Sanitary Canal. *6/11/99*

Trawling/Trapping Effective in Fourth Goby Roundup Near Chicago

Ashland Fishery Resources Office

The purpose of the Chicago barrier project is to prevent nuisance fish and zooplankton from spreading from the Great Lakes to the Mississippi River and Mississippi River exotics from spreading into the Great Lakes. The Service has been tasked with monitoring the range of the round goby in the Chicago canal system while the experimental barrier is being designed and constructed outside the goby range. Ashland FRO designed an experimental goby trap based on an idea by Dr. Lynda Corkum, University of Windsor, Windsor, Ontario. The traps are constructed from PVC pipes and are simple and cheap to construct. During the Fourth Goby round-up, the traps were baited with salmon meat and fished overnight beyond the known goby range in the Cal-Sag canal, the principle waterway of goby expansion. Goby detection by the traps saved nearly four miles of surveillance trawling in this canal and allowed daytime trawling to concentrate effort and detect gobies an additional 5.6 miles beyond the furthest trap discovery. The experimental traps were constructed and deployed by Ashland and LaCrosse FROs, while trawling was conducted by Ashland and Alpena FROs. Partners include: Illinois Department of Natural Resources, Illinois Natural History Museum and U.S. Army Corps. of Engineers and Service fishery resources offices at Ashland and LaCrosse and Green Bay, Wis., and Alpena, Mich. *6/11/99*

Mississippi River (Pool 12) Dredge Placement Study

LaCrosse Fishery Resources Office

This study will assist river managers in making decisions concerning placement of dredge material to reduce the impacts on the aquatic community. The third sampling period was conducted for the Pool 12 Dredge Placement Study near Bellevue, Iowa. The total catch was quite large this month which may be attributed to the early spring this year. *6/30/99*

Lake Superior Coaster Brook Trout Rehabilitation on Track

Ashland Fishery Resources Office

Coaster brook trout meeting brings geneticists and fishery managers together to review rehabilitation efforts. The meeting was held to assess and evaluate what is known of coaster brook trout and to examine the genetics issues involved in rehabilitation. The meeting provided an opportunity for geneticists and fishery managers to "audit" current Fish and Wildlife Service coaster brook trout rehabilitation efforts in Lake Superior and recommend direction for future activities. Meeting participants included five genetics experts from federal agencies and universities, Fish and Wildlife Service staff from the Washington office, Region 3 office, and several field offices, the National Fish and Wildlife Foundation and Ontario Ministry of Natural Resources. Participants were briefed on the status of coaster brook trout in U.S. and Canadian waters of Lake Superior, current rehabilitation activities, and results of genetic analysis from brook trout samples taken throughout Lake Superior and northeastern North America. Geneticists provided expert opinions on several phases of rehabilitation efforts including stocking, broodstock development and management. Based on existing genetic information the participants supported rehabilitation projects in progress and encouraged continuation of these efforts. Existing projects include development of genetically sound captive broodstocks from Lake Superior strain fish, use of different strains of Lake Superior coaster brook trout for stocking, stocking various life stages and in suitable habitat locations, and continuation of genetic sample analysis. Of particular interest is microsatellite DNA analysis work in progress which could provide description and delineation of coaster brook trout at the population level. Results of the microsatellite analysis will be available in fall 1999. .Partners include: National Fish and Wildlife Foundation, Ontario Ministry of Natural Resources, Department of the Interior. *6/17/99*

Eurasion Ruffe Expand: Nuisance Fish Detected in Michigan River

Ashland Fishery Resources Office

Ashland Fishery Resources Office (FRO) has discovered Eurasion ruffe in the mouth of Michigan's Firesteel River, a tributary on the south shore of Lake Superior. The discovery was made on June 22, 1999, during dedicated surveillance activity and marks the first detectable expansion since 1995. The Firesteel River is located 12 kilometers (7.3 miles)) east of the Ontonagon River, the previous range boundary location. One yearling male ruffe was captured in a modified Windermere trap baited with nightcrawlers and fish eggs. Surveying with a combination of trawling and trapping, a trap was set next to submerged logs and pilings from a dismantled bridge, an area which was untrawlable. Ashland FRO was operating on a tip received from a member of the Bad River Band of Chippewa Indians, that many adult ruffe can be found under log jams piled up against bridge abutments on the Bad River, Wis. The current range of ruffe in Lake Superior—with the Duluth-Superior Harbor as the origin—extends to Thunder Bay, Ontario along the north shore and 12 kilometers east of Ontonagon, Mich., along the south shore. In Lake Huron, ruffe detection remains only near Alpena, Mich.. *6/22/99*

Service Workshop Part of Michigan's "Free-Fishing" Day

Alpena Fishery Resources Office

The Alpena Fishery Resources Office led a workshop on exotic species for the Hubbard Lake Sportsman's Club Fishery Clinic. Eighty children under the age 16 attended. The round goby, ruffe, rusty crayfish, zebra mussels, and live sea lamprey (compliments of the USGS Hammond Bay Biological Station) were displayed and discussed with the children and their parents. The live lamprey were the hit of the workshop. Other activities provided by the Sportsman's Club were workshops on knot-tying, casting, fish cleaning, and a pool holding rainbow trout and bluegill (purchased by the Sportsman's Club) was available for fishing. Partners include: Hubbard Lake Sportsman's Club and Alcona Volunteer Fire Department.. *6/30/99*

Fish Distribution Truck Transferred to LCO Tribal Hatchery

Ashland Fishery Resources Office

Frank Stone (Ashland Fishery Resources Office) arranged for the transfer of a surplus 1986 fish distribution truck (from the Welaka National Fish Hatchery, Florida) to be reassigned to the Lac Courte Oreilles (LCO) Indian Reservation. The truck is equipped with a 1,000 gallon fish tank plus oxygenation and water recirculating life support systems The LCO Tribal Fish Hatchery Program paid the travel expenses for Frank to fly to Florida and drive the vehicle back to northern Wisconsin (1,650 miles). The Tribe will use the vehicle to help transport hatchery fish to various stocking sites near the Reservation. Over the past nine years the Ashland Fishery Resources Office has arranged for the transfer of several hundred thousand dollars worth of fish distribution trucks, fish hatchery equipment, generators and vehicles to Tribal resource Programs in Region 3. By making surplus equipment transfers like this possible, we not only prolong the intended use for the equipment but also help free up funds by the receiving agency to be used in other natural resources areas. *6/30/99*

La Crosse Fishery Resources Office Assists on Four "Fish Day" Events

LaCrosse Fishery Resources Office

LaCrosse Fishery Resources Office assisted on four National Fishing Day Events this year which had a total participation number of nearly 800. An electrofishing demonstration was given at Minnesota Valley and La Crosse Fishery Resources Office staff coordinated the Service's participation for Tomah's fishing day. Upper Mississippi provided a chance for kids to ride the waves of the mighty Miss. and try to catch one of over 100 species of fish. All events were a tremendous success. *6/30/99*

St.Croix River Zebra Mussel Monitoring Results

LaCrosse Fishery Resources Office

The first zebra mussel monitoring dives of the season were conducted last week with over 750 boats examined and several fixed surface sites. The exotic was only found on two boats, both had been on the moored on the Mississippi River earlier in the year. Zebra mussels have been at the door step of the St. Croix River for several years but have yet developed a reproducing population within the waterway. Last week a crew of divers led by Byron Karns (NPS) and Scott Yess (FWS) searched for zebra mussels from Stillwater to Prescot. Nearly 800 boats, three mussel beds and several fixed material sites were examined. The exotic was found on only two boats that had been previously moored on the Mississippi River. Partners include: National Park Service, Minnesota Department of Natural Resources, Great Lakes Indian Fish and Wildlife Commission, Army Corps of Engineers, Northern States Power, U.S. Coast Guard and Minnesota and Wisconsin Boundary Area Commission. *6/30/99*

More than One Million Lake Trout Planted in Lake Michigan

Jordan River National Fish Hatchery

Lake trout plantings in Lake Michigan were completed June 3, 1999. A total of 1,035,900 fish were released offshore using the Service vessel M/V Togue. A total of 15,688 miles were safely driven by our truck drivers in delivering the fish to the vessel. Lake trout were stocked in Lake Michigan for restoration purposes. *6/30/99*

Jordan River NFH Lake Trout Fry Transfer

Jordan River National Fish Hatchery

Jordan River National Fish Hatchery (NFH) transferred 276,800 lake trout fry to the Pendills Creek NFH June 28, 1999. The lake trout were from the Lewis Lake strain and will be reared at Pendills Creek for release into the Great Lakes in spring of 2000. Lake trout fry were transferred to the Pendills Creek NFH for further rearing. They will be released in the spring of 2000. *6/30/99*

Ashland Surveys Fish Species at f Red Lake River

Ashland Fishery Resources Office

The US Army Corps of Engineers asked the Ashland Fishery Resources Office to survey the diversity of fish species in the Red Lake River on the Red Lake Indian Reservation, Red Lake Minn. The Red Lake Tribal Council is concerned about the possible presence of carp in the Red Lake River, and the potential for introduction of this Exotic into the Red Lakes via upstream passage through the Red Lake water control structure. No recent fishery's surveys have been conducted within this 13-mile river system (within the Reservation) to determine the presence of carp. This survey will serve as a baseline regarding this issue so future management decisions can be made. Another survey of this study area will be scheduled in October. *6/30/99*

Surveys of Red Lake Reservation Help Tribes Manage Lakes

Ashland Fishery Resources Office

Frank Stone traveled to the Red Lake Indian Reservation (Red Lake, Minnesota) to conduct fishery assessments on three inland lakes (Shemahgun, Bass and Island Lakes). As part of a reimbursable agreement with the Red Lake Band, the Ashland Fishery Resources Office provides fishery technical assistance that also includes bottom trawling for walleye fingerlings in Red Lake. The data generated from these inland lake surveys were gathered using a DC electrofishing boat. The surveys are conducted during the evening hours while fish are the most active. Once the necessary information has been gathered, the fish are safely returned to the lake. The data will be summarized and a final report prepared for Tribal resource managers. This information is used by the Tribe to determine future fishery management options for each lake. *6/30/99*

Round Goby Expand Further Within Chicago Waterways

LaCrosse Fishery Resources Office

Recently concluded surveillance activities indicate that the round goby, a nonindigenous fish native to central Asia, has expanded its geographic range at least 10 miles further downstream in a portion of the Chicago area waterways during the past year. Round goby are now present throughout most of the Calumet Sag Channel (a part of the Upper Mississippi River Navigation System) downstream as far as river mile 308, nearly 25 miles inland from their original point of introduction along the shores of Lake Michigan. Installation of an electrical fish barrier is scheduled for 2000 at a site located further downstream (river mile 296.5) in the Chicago Ship and Sanitary Canal and should help to limit the spread of the round goby, as well as other nonindigenous fish species, between the Great Lakes and Mississippi River basins. A series of waterways in metropolitan Chicago connect the Great Lakes and Mississippi River drainage basins. These shipping channels facilitated the spread of the infamous zebra mussel, an exotic nuisance species, to environmentally sensitive portions of several interior North American drainage basins earlier this decade. Now there is concern that the round goby, a nonindigenous fish recently introduced to the Great Lakes from central Asia, may similarly expand its range across the mid-continent with adverse consequences for native aquatic fauna. The La Crosse Fishery Resources Office of the U.S. Fish and Wildlife Service recently completed its 4th annual survey of the distribution of round goby in the Chicago area waterways. Cooperators included representatives from five federal, two state, and two regional natural resource agencies, as well as two educational institutions, a utility company, and a local group of concerned citizens. Round goby were captured with a variety of gears in the Little Calumet River and the Calumet Sag Channel at locations as far downstream as river mile 308.5. This is nearly 25 miles inland from the round goby's point of origin along the shores of Lake Michigan and is about 11 miles further downstream from the previously reported leading edge of its distribution following the 3rd annual survey in 1998. Large numbers of round goby were also captured by trawling in a portion of the Chicago River located within 1 mile of its confluence with Lake Michigan near the city's downtown Loop district. This represents the first time round goby have been collected in the Chicago River during these annual spring surveillance operations. Round goby were not found in any other portion of the Chicago

area waterways surveyed this year, including the Des Plaines River and the Chicago Ship and Sanitary Canal. These recent results indicate that the inland distribution of the round goby is now proceeding along two converging pathways in the Chicago area and toward the Mississippi River at a rate that has significantly increased during the past year. Current year class production and an abundance of the rocky habitat preferred by round goby, particularly in the Calumet Sag Channel, are expected to promote the continued downsteam emigration of this exotic nuisance species toward the Chicago Ship and Sanitary Canal during the latter half of 1999. Continued periodic surveillance of round goby distribution in the Chicago area waterways will be necessary to evaluate (1) the effectiveness of an electrical fish barrier that will soon be deployed here and (2) the need for additional control measures to prevent this species from expanding its range further within the Mississippi River basin. Partners include: Argo High School, Commonwealth Edison, Cook County Forest Preserve, Illinois Department of Natural Resources, Illinois Environmental Protection Agency, Illinois-Indiana Sea Grant, Loyola University of Chicago, Metropolitan Water Reclamation , District of Greater Chicago, Perch America, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Geological Survey, and Chicago Tribune. *6/30/99*

Sterile Lampreys Released Into St. Mary's River

Marquette Biological Station

The Marquette Biological Station sterilized and released more than 15,000 male sea lampreys into the St. Mary's River during May. Sterile male sea lampreys compete with normal males for mates and reduce reproductive success. The Service conducts a sea lamprey control Program under contract with the Great Lakes Fishery Commission. As part of this integrated pest management Program, the Marquette Biological Station sterilized over 16,000 male sea lampreys for release into Great Lakes tributaries during May. Sterilized male sea lampreys compete with normal males for mates and reduce reproductive success. The sterile male release technique has been used to help control sea lampreys in the St. Marys River and Lake Superior since 1991. Personnel from the Service and Canadian Department of Fisheries and Oceans harvested male sea lampreys from tributaries to Lakes Superior, Michigan, Huron and Ontario during their spawning migration. Males were transported to a sterilization facility located at the Lake Huron Biological Station (USGS/BRD) where Service employees sterilized them. During May, over 12,000 sterile males were released in the St. Marys River and about 4,000 sterile males were released in 5 study streams in the U.S. and Canada. Normal male and female sea lampreys were also released into 8 study streams. The study is being conducted over a period of four years to evaluate the effect of sterile male releases. Partners include: Great Lakes Fishery Commission; Department of Fisheries and Oceans, Canada; Great Lakes Indian Fish and Wildlife Commission. *6/30/99*

Alpena Biologist Helps Produce Great Lakes Lake Sturgeon Video

Alpena Fishery Resources Office

"Sturgeon of the Great Lakes," is one of a five- volume video library " The Nine Sturgeons of North America." The video will be available free of charge to state and federal agencies, public school and university/colleges and sport/interest groups. Fishery Biologist Tracy Hill participated in the production of a Great Lakes lake sturgeon video. Production of the video was coordinated with Earthwave Society which produced "Sturgeon: Ancient Survivors of the Deep," a video detailing the nine sturgeon species endemic to the North American Continent. Biologist Hill coordinated production of the video for the Central Great Lakes Bi-National Lake Sturgeon Group. Filming began in Amherst, New York, covering the Service sturgeon activities on Lake Ontario and the Niagara River. Filming then moved to Mt. Clemens Mich.,, to cover sturgeon activities of the Service, Michigan Department of Natural Resources, Ohio Department of Wildlife, Ontario Ministry of Natural Resources on Lakes Huron and Erie and the St. Clair Waterway. Approximately five hours of tape were recorded during the week long event. Partners include: Lower Great Lakes Fishery

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Resources Office, Ohio Division of Wildlife, Michigan Department of Natural Resources, Wisconsin Department of Natural Resource, Ontario Ministry of Natural Resources, Macomb County Police Department, Detroit Zoological Institute and Pudy Fisheries. *6/30/99*

Pendills Creek Observes National Fishing Week Celebration

Pendills Creek National Fish Hatchery

Pendills Creek National Fish Hatchery celebrated National Fishing Week at Seney National Wildlife Refuge. Some of the highlights of the annual event included a Children's Fishing Contest and complimentary fish fry dinner. The celebration was attended by many families and educational groups. Robert H. Pos, fishery biologist, represented Pendills Creek National Fish Hatchery at the event. Highlights of his public informational display included bio-plastic displays of lake trout, posters and brochures, and an aquarium containing live lake trout fingerlings and broodstock. The fishing contest was a great success. Winners were awarded items donated from local businesses. *6/30/99*

Atlantic Origin Sea Lampreys Investigated for Great Lakes Control Effort

Marquette Biological Station

The Marquette Biological Station has begun a four year evaluation to determine if Atlantic origin male lampreys could be used to augment the supply of sterile males in the Great Lakes. Previous studies have indicated that Atlantic origin lampreys can be sterilized in the same manner as Great Lakes lampreys. The Great Lakes Fishery Commission, with its agents, the Service and the Department Fisheries and Oceans, Canada, conduct a program of sterile male release to control sea lampreys in the Great Lakes. The full potential of this technique is limited by the supply of lampreys. All sources of Great Lakes lampreys that are technically, logistically, and economically accessible are being utilized.

The Sterile Male Release Technique Task Force and the Fish Health Committee of the Great Lakes Fishery Commission have initiated a four-year protocol to develop a disease profile of sea lampreys in three Atlantic coastal tributaries. The protocol will assure that harmful diseases are not introduced into the Great Lakes. During 1999 - 2002, lampreys from the Merrimack River at Lawrence, the Connecticut River at Holyoke, and the Farmington River at Rainbow will be evaluated for disease with assistance from the Connecticut Department of Environmental Protection and the Massachusetts Division of Fisheries and Wildlife. Collections of 60 animals from each site are being evaluated at the Service's Lamar Fish Health Unit.

The Marquette Biological Station plans to trap lampreys at the Holyoke Dam on the Connecticut River in May and June 2000. The goal of the study is to determine the feasibility of removing up to 10,000 male lampreys from the Connecticut River at Holyoke. Objectives of the study are to 1) determine the lamprey sex ratio, 2) obtain a population estimate, and 3) determine the logistics and efficiency of trapping in the Connecticut River. All captured lampreys will be returned to the river. Population data is needed to assure that the proposed removal of male lampreys will not adversely affect the lamprey population.

Other Commission-funded studies will yield information about the effect of sex ratios and lamprey spawning density on recruitment. Logistics of trapping must be tested in order to assure operations do not interfere with ongoing fish passage operations and to maximize trap efficiency and effort. Efforts will continue over the next few years to identify and inform appropriate regulatory agencies of the proposal to transfer Atlantic origin lampreys to the Great Lakes. We expect to complete field trials and genetic studies in 2001, and make a decision on feasibility of the project by 2002. Partners include:Great Lakes Fishery Commission, Service's Lamar Fish Health Unit, Connecticut Department of Environmental Protection, and Massachusetts Division of Fisheries and Wildlife. *6/30/99*

Alpena FRO Assists With Sea Lamprey Treatment on St. Mary's River

Alpena Fishery Resources Office

Alpena Fishery Resources Office (FRO) provided staff and a vessel to collect non-target fish during aerial treatment for sea lamprey in the St. Mary's River the week of July 5, 1999. Many agencies cooperated in the treatment, coordinated by the

Marquette Biological Station. Few non-target fish were collected. The treatment appeared to be successfully affecting larval sea lamprey as many were seen swimming on the surface of the water. *7/12/99*

Treatments Kill Millions of Sea Lampreys in St Mary River

Marquette Biological Station

A small percentage of the St Mary River, the connecting waterway between Lakes Superior and Huron, was treated with lampricide. July 5-15, 1999. A multi-agency work force combined efforts to ensure a highly successful treatment on the river. An estimated 3 million sea lamprey larvae were destroyed, roughly 60 percent of the lampreys in the river. The lampricide treatment is an integral part of a cost-effective integrated pest management program that also includes an enhanced trapping program to remove migrating spawning phase lampreys, and a sterile-male-release technique to reduce reproduction potential. The combined effectiveness of the integrated pest management program will eventually reduce parasitic sea lampreys in Lake Huron and northern Lake Michigan by 85 percent, resulting in more fish for everyone. Service staff from Marquette and Ludington Biological Stations, Alpena Fisheries Resource Office, and Pendill's Creek NFH participated in the treatments. Partners include: Great Lakes Fishery Commission, Department of Fisheries and Oceans, Canada, Michigan Department of Natural Resources, Michigan Department of Environmental Quality, Chippewa-Ottawa Fishery Treaty Management Authority, U.S. Geological Survey (Upper Midwest Environmental Sciences Center, and Great Science Center, Hammond Bay Station. *7/15/99*

Ashland Biologists Use Transmitters to Track Juvenile Lake Sturgeon

Ashland Fishery Resources Office

During June and July 1999, eight juvenile lake sturgeon were fitted with external ultrasonic transmitters by biologists from the Ashland Fishery Resources Office (FRO). The juvenile sturgeon, ranging in length from 400 to 900 mm, were captured by Great Lakes Indian Fish and Wildlife Commission (GLIFWC) biologists in Lake Superior near the mouth of Bad River, Wisc. Ultrasonic transmitters are the only practical means for tracking lake sturgeon in Lake Superior due to water depth. Crews from Ashland FRO, Bad River Natural Resource Department and GLIFWC will track the sturgeon by boat for 12 months. Little information exists in literature about the movement and habitat preferences of juvenile lake sturgeon. The Lake Sturgeon Rehabilitation Plan for Lake Superior lists identification of juvenile habitat as one of the primary research needs for restoration. Data collected on fish location, movement, water depth and water temperature will help determine preferred habitat for juvenile lake sturgeon. This information can them be used by fishery management agencies to protect, enhance, or restore habitat for juvenile sturgeon and assist rehabilitation efforts currently underway in Lake Superior.

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LaCrosse FRO Staff Surveys Fish at Trempealeau NWR

LaCrosse Fishery Resources Office

Staff from LaCrosse Rishery Resources Office (FRO) conducted a week-long fishery survey on Treampealeau NWR in July in an effort to determine the impact of the Refuge's Habitat Rehabilatation and Enhancement Project. This is a multi-year evaluation which was initiated by LaCrosse FRO in 1992. During the study there has been slight shifts in abundance of various species however the dominant species (bullhead, carp, perch and northern pike) hasn't changed. This survey

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will provide valuable insight as to how future management of the fishery at Trempealeau should proceed and if the habitat manipulations can benefit fisheries. Partners include: Wisconsin and Minnesota Conservation Corps and Refuge volunteers. *7/22/99*

Triploid Grasscarp Inspection/ Certification Program Activities by Caterville FRO

Carterville Fishery Resources Office

The Carterville Fishery Resources Office (FRO) participates in the Service's Triploid Grasscarp Inspection/Certification Program, a service offered to natural resource agencies in the United States and other countries, to help protect their natural resources. During Fiscal Year 1999, service inspectors from Carterville FRO conducted 12 inspection for triploid grasscarp producers in Region 3. In all, 14,392 triploid grass carp were certified for 23 shipments into four states. Producers failed two inspections (17 percent), supporting the need for the Service's involvement. The inspection program provides assurances to agencies, and others about protecting aquatic resources, that shipments of grasscarp alleged to be all triploid, do not, within the confidence limits of the inspection program, contain diploids. *8/7/99*

Green Bay Fishery Office Completes Final Report to EPA for Lake Michigan Mass Balance Study

Green Bay Fishery Resources Office

The Green Bay Fishery Resources Office (FRO) completed a final report to the Great Lakes National Program Office of U.S. Environmental Protection Agency describing the results of work they performed as part the Lake Michigan Mass Balance (LMMB) study. The LMMB is a multi-year, multi-agency study to comprehensively describe and model the flow of contaminants into and out of Lake Michigan with emphasis on the bio accumulation of contaminants in the food web. The results of this effort will guide future toxic load reduction efforts at the federal, state and local levels. U.S. EPA has been especially interested in understanding how pollutants accumulate in Lake Michigan lake trout and coho salmon as representatives of top level predators in the food chain. The Green Bay FRO provided advice on the initial study design, then conducted comprehensive collections of coho salmon for contaminant analysis and a detailed study and description of the diet of coho salmon during 1994-1995. The study involved collections of fish representing all life history stages from all regions of Lake Michigan resulting in a collection of data from over 1,800 coho salmon. In addition to this final report, staff from the Green Bay FRO have co-authored two peer-reviewed articles published in Environment Science & Technology and have completed the draft of a third paper to be submitted to the Journal of Great Lakes Research involving different aspects of the data collected for the LMMB study. The Green Bay FRO is also preparing reports for U.S. EPA describing the movement and historical diet of lake trout and coho salmon in Lake Michigan for further use by the modelers for the LMMB study. Partners include: Wisconsin, Illinois, Indiana and Michigan Departments of Natural Resources, Michigan State University, University of Michigan, Ludington Charterboat Association and Holland Area Steelheaders Association. *8/1/99*

Service, Partners Complete Whittlesey Habitat Survey

Ashland Fishery Resources Office

The Service, together with its partners Bayfield County,Wis., Wisconsin Department of Natural Resources and the Great Lakes Indian Fish and Wildlife Commission, conducted a survey of the physical perameters of Whittlesey Creek and its tributaries in August 1999. This information will provide a "snapshot in time," giving hydrologists and biologists baseline information about the health of the system. This information is critical to the stream restoration process and the ability to assess the quality of restoration efforts. A report will be available on the Ashland Fishery Resources Office homepage early next year. Partners include: Wisconsin Department of Natural Resources, Great Lakes Indian Fish and Wildlife Commission,

Bayfield County Land Conservation Department, local volunteers. *8/1/99*

Removed Last Year, Eurasion Ruffe Reinvade Wisconson's Kakagon River

Ashland Fishery Resources Office

In 1998, Ashland Fishery Resources Office (FRO) conducted an experiment to remove an isolated colony of ruffe by bottom trawling. The experiment took place in the mouth of the Kakagon River, Wis., a tributary of Chequamegon Bay in southwest Lake Superior. Statistically, nearly 100 percent of the colony was removed in the nine-day exercise. Follow-up trawling conducted a year later revealed that ruffe have reinvaded the site in abundance comparable to the 1998 level. The reinvasion was expected as ruffe are increasingly abundant throughout Chequamegon Bay. Ideally, this technique was experimented as a possible method to delay ruffe expansion on the periphery of their range, or to remove a colony from a small unconnected inland lake. To these ends, the experiment demonstrated that bottom trawling can potentially achieve success under certain conditions. Partners include: Wisconsin Department of Natural Resources, Bad River Tribal Natural Resources Department. *8/5/99*

Walleye Restoration on Track in Minnesota's Red Lakes

Ashland Fishery Resources Office

Signs of walleye revival are appearing in the Red Lakes, Minnesota. Following completion of a walleye restoration plan, a total of 44 million walleye fry were stocked into the Red Lakes last May, a cooperative effort between the Red Lake Band of Chippewa, Minnesota Department of Natural Resources (MNDNR), and the the Service. Personnel from Ashland Fishery Resources Office, the Red Lake tribe, and Minnesota DNR completed over 225 minutes of bottom trawling in the Upper and Lower Red Lakes. Forty-nine juvenile walleye were captured, presumably from stocked specimens. Seine hauls performed by tribal members have also captured juvenile walleye. The captured specimens will be examined for the presence of an oxytetracycline mark on the otoliths. Pat Brown, tribal fishery biologist, believes the stocking effort was successful, and the growth rate is good. Stock length of fry was 7 mm; captured specimens measured approximately 110 mm. The three most abundant forage species collected were yellow perch, spottail shiner, and freshwater drum. The yellow perch catch declined significantly from 1998 due to a poor year class in 1999. Catches of black crappie and lake whitefish appeared to have increased from 1998, while emerald shiners appeared to have declined (observations only, catches were not totalled in this report). Partners include the Red Lake Tribal Natural Resources Department and Minnesota DNR *8/12/99*

Controlling Carp Population Key to Waterfowl Use at Horicon NWR

LaCrosse Fishery Resources Office

Staff at Horicon National Wildlife Refuge surveyed Refuge fishery and water levels in August to provide information on carp populations and water volume. The information will be used to determine quantities of rotenone necessary to treat the marsh this winter, and for evaluating the success of the project. Carp are the main reason vegetation will not establish on the marsh which reduces waterfowl use. Over 90 percent of the fish sampled at Horicon NWR this past summer were carp and the biomass was greater than 98 percent carp. These high carp numbers result in an absense of vegetation; significantly reducing waterfowl use. A carp treatment is scheduled this winter as part of an intergrated carp control plan that includes trapping, spot treatments, predator stocking, water level manipulation and screening. *8/15/99*

Lake Sturgeon Reintroduced to Menominee Reservation in Wisconsin

LaCrosse Fishery Resources Office

The Service's LaCrosse Fishery Resources Office (FRO) coordinated the reintroduction of lake sturgeon to Menominee Reservation waters of the Wolf River August 16-17, 1999. For most of this century, lake sturgeon had been extirpated from this portion of their

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native range. In 1995, the Menominee Reservation Lake Sturgeon Management Plan was initiated and involves the transfer of Lake sturgeon captured from other area waters. This year, 22 lake sturgeon were captured by the Wisconsin Department of Natural Resources on the Wolf River, downstream from the Shawano dam. A Wisconsin DNR hatchery truck transported the fish to a holding area on the reservation where fishery biologists from the Service, U.S. Geogolical Survey, and veterinarian "sturgeon surgeons" implanted radio transmitters in the fish. After recovery from the surgery, the DNR hatchery truck transported the fish to the reintroduction site. Since introduction, 10 of the fish have moved upstream, while the remaining 12 fish linger in a half-mile stretch below the reintroduction site. This year's numbers of adult sturgeon transferred was double the numbers from prior years. Prior to implementation of the reintroduction project, lake sturgeon had been absent from this portion of their range, and absent from the culture of the Native Menominee People since the early 1900s. Lake sturgeon are a species of cultural and spiritual significance to the Menominee people. The recent reintroduction into Reservation waters now allows the people to practice their traditional spring sturgeon ceremonies with sturgeon actually present. Partners include: Menominee Tribe of Wisconsin, Wisconsin DNR, Bureau of Indian Affairs, USGS-BRD Madison and LaCrosse, Wis., and Dr. Paul Reifenrath, veternarian. *8/17/99*

Ruffe Trawling Demonstration Give Minnesota Legislators First Hand Knowledge With Exotics

Ashland Fishery Resources Office

Personnel from Ashland Fishery Resources Office (FRO) demonstrated bottom trawling as a ruffe collection technique for eight members of the Legislative Commission on Minnesota Resources (LCMR). The state senators and representatives observed the ruffe trawling in the Duluth-Superior harbor from Minnesota DNR vessels and the Ashland FRO trawler. Personnel from U.S. Geological Survey, Biological Research Division, Lake Superior Biological Station, assisted in the demonstration and distributed graphs depicting trends in ruffe and native forage fish abundance in the St. Louis River Estuary. The five minute tow captured a total of 280 ruffe (97 percent of the total catch), one round goby, four trout-perch, two emerald shiners, and one walleye. A freshwater mussel was also collected with it's shell halves sealed together by zebra mussels. Following the trawling, the catch was sorted by species, and LCMR members examined the catch. LCMR members also examined a catch of 12 round gobies caught by anglers. Senator Len Price, chairperson-LCMR, stated that the demonstration was very informative, and LCMR members gained an appreciation for exotic species problems. Partners include: USGS-BRD-Lake Superior Biological Station, Minnesota Department of Natural Resources, Minnesota Sea Grant. *8/18/99*

Service Assists White Earth Reservation Biologists Survey Four Reservation Lakes

LaCrosse Fishery Resources Office

Service Staff from LaCrosse Fishery Resources Office (FRO) conducted surveys on four lakes on the White Earth Reservation in an effort to determine the success of the walleye stocking program. The lakes were netted and electrofished by personnel from White Earth Biology Department (WEBD) assisted by LaCrosse FRO. The walleye management program is WEBD's most time consuming project with more than 50 lakes to manage for walleye. *8/20/99*

Service Joins Partners to Restore Michigan Tin Shanty Bridge

Alpena Fishery Resources Office

The Service's Alpena Fishery Resources Office (FRO) was among 12 federal and state agencies initiating restoration of a road/stream crossing in Otsego County, Mich, that dramatically reduced sediment entering the Black River while restoring fish passage to five river-miles of brook trout spawning habitat. Two culverts were removed and replaced with a 30-foot steel span on the main branch of the Black River in Otsego County on August 23, 1999. Due to inadequate culvert size and placement this sand/gravel road periodically washed out during high water events. The sand and silt from the road washed directly into the river, contributing several tons of sediment to the watershed with every

incident. Sediment filled in several river-miles of brook trout spawning habitat, located directly downstream from the road/stream crossing. The culverts were also fish passage barriers to a native strain of brook trout. Spawning habitat is located both upstream and downstream of this road/stream crossing. Replacement of Tin Shanty Bridge has allowed the river to return to its original width/depth ratio, and the bottomless span compensates for 25 year storm events. Planned for almost two years, this project cost over $100,000. Twelve federal, state, and local organizations partnered to carry out this enhancement, including Trout Unlimited (4 local MI chapters, and National TU), Shell Noreast, the Service through a National Fish and Wildlife Foundation grant, Montmorency County Conservation Club, Otsego Road Commission, Otsego Wildlife Legacy Society, Huron Pines RC&D, NRCS, Michigan DNR (Forestry and Fisheries Divisions), Michigan DEQ, Upper Black River Watershed Restoration Committee, and Loshaw Brothers (crane rental). The steel span will be decorated with a wooden false front so it will appear to be a timber bridge. A small plaque with cooperators names will be attached to the bridge during the dedication ceremony scheduled for October 5, 1999. *8/23/99*

Alpena FRO Conducts Summer Round Goby Angling Survey at Shiawassee NWR

Alpena Fishery Resources Office

Alpena Fishery Resrouces Office (FRO) coordinated a summer round goby angling survey in August 1999 to look for the exotic round goby in waters of the Shiawassee NWR in Saginaw, Michigan. The round goby is an aggressive invader fish species from Eastern Europe that competes with native fish for food and habitat resources, and poses a potential threat to refuge trust fishery resources. The goby has been captured up and downstream from the refuge in waters of the Shiawassee, Flint, and Saginaw Rivers. No goby were captured during a spring angling survey of refuge waters of the Shiawassee and Flint Rivers. The summer survey was conducted on August 28, 1999, with 36 volunteers from local conservation groups and the Boy Scouts. No round goby were captured. Information was recorded on all fish captured to provide information on recreational fishing opportunities on the refuge and to gather baseline information prior to invasion by exotic species. Partners include: Friends of Shiawassee NWR; Shiawassee Flats Advisory Council; Saginaw Field and Stream Club; Michigan United Conservation Clubs-District 10; and Troop 101, Boy Scouts of America. *8/28/99*

International Committee Adopts Rehabilitation Plan For Lake Superior Coasters

Ashland Fishery Resources Office

Efforts to bring back the unique, giant "coaster" brook trout to Lake Superior got a boost in the fall of 1999, with the adoption of a new species rehabilitation plan by the Lake Superior Committee, an international group representing all Lake Superior management agencies. The document, "A Brook Trout Rehabilitation Plan For Lake Superior," was adopted by the Committee in September, and will guide efforts by tribal, state, provincial and federal resource managers to restore coaster brook trout throughout the Lake Superior basin. The U.S. Fish and Wildlife Service's Ashland Fishery Resources Office (FRO) played a key role in developing the plan, which was produced by Subcommittee on Brook Trout in Lake Superior through the Lake Superior Technical Committee. Fishery Biologist Lee Newman, Ashland FRO, Chaired the Subcommittee and served as lead editor of the plan.

Once abundant and widespread along most of the shores of Lake Superior, coaster populations originally spawned in more than 120 tributaries. In the early 1800s, coasters put Lake Superior on the map as the world class fishery for brook trout. Their size, spectacular colors and tasty food qualities, combined with an eagerness to attack lures or flies of any kind, made them the darling of period fishermen but also nearly caused their extinction by an unregulated fishery. Since the late 1800's, only a handful of tiny remnant populations have continued to exist.

The rehabilitation plan outlines goals and an approach for Lake Superior fisheries managers to utilize in rehabilitation efforts. The goal for brook trout *(Salvelinus fontinalis)* rehabilitation in Lake Superior is to maintain widely distributed, self-sustaining popula-

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tions in as many of the original, native habitats as is feasible and manageable. Reaching the goal will require, singly or in combination, actions to restore tributary habitat, regulate control of harvest, and introduce genetically appropriate strains through stocking. Progress toward the goal should be measured by evidence of increased robustness of existing populations and successful reestablishment of new populations in areas containing sufficient or restored habitat. Management should concentrate on maintaining populations that contain six or more age classes of brook trout and have at least two spawning age classes of females. Existing habitats should be protected and impaired habitats should be restored. Only strains of brook trout originating within the Lake Superior basin should be considered for stocking or reintroduction. Gamete collections must be designed to limit the risk of weakening the donor populations. Hatchery-reared eggs, fry, and older fish should be stocked to reestablish populations where they have been extirpated. Routine assessment should include monitoring abundance, growth, recruitment, and harvest from each population. Public information can play a key role in building support and appreciation for brook trout rehabilitation. Future research should focus on the barriers to rehabilitation, identification of critical habitats for each life stage, genetic, behavioral, and morphological studies, and community interactions. *9/1/99*

Multi-Agency Lake Sturgeon Working Group Drafts Rehabilitation Plan for Green Bay Lake Sturgeon

Green Bay Fishery Resources Office

With leadership from the Service's Green Bay Fishery Resources Office, a multi-agency partnership that includes the Wisconsin and Michigan Departments of Natural Resources, area universities and the Service's Fisheries, Ecological Services and Sea Lamprey programs are further rehabilitating lake sturgeon in Lake Michigan's Green Bay. As a first step, representatives from each agency collaborated to drafting a lake sturgeon rehabilitation plan for the Green Bay basin. The draft plan provides a brief account of the history of lake sturgeon in Green Bay and its tributaries, describes the many impediments that have and are currently limiting rehabilitation of the species in these waters, and outlines strategies to address each of the impediments. The draft plan is an initial step in the process to develop a comprehensive management plan for lake sturgeon in the Green Bay basin, a process that will involve wider participation from public and other organizations. In the mean time, the Service-led work group is continuing a two-year history of sharing information and collaborating on various field initiatives to gather needed biological data from the various remnant stocks of lake sturgeon in the basin including an expanded tagging effort. The group is also collaborating on development of proposals targeted at several funding sources to address various aspects of the draft rehabilitation plan. *9/1/99*

Service Partners Collect Wild Brook Trout For Tribal Hatchery Broodstock

Ashland Fishery Resources Office

Sportsmen from the Lake Superior basin will soon benefit from a recent collection of juvenile (2-4 inches) brook trout from the Jumbo River (in Michigan's Houghton county). Personnel from the Ashland Fishery Resources Office, Ottawa National Forest, Michigan Department of Natural Resources, and Keweenaw Bay Indian Community (Natural Resources Department) recently collected more than 600 brook trout and transferred them to the Keweenaw Bay Indian Fish Hatchery. The project was conceived by the Keweenaw Bay Indian Community as a means to stimulate the brook trout recovery program for the Keweenaw Bay area. The juvenile trout, along with fish from a similar collection in 1997, are being used to initiate a new strain of brook trout broodstock at the Keweenaw Bay tribal fish hatchery. This wild trout collection and rearing program was initiated to increase the survivability and number of stocked fish by providing for the release of a more aggressive (wild) hatchery reared fish. The brook trout were originally captured from six stations scattered around the Jumbo River watershed. This type of fish collection technique will insure genetic variations are maintained within this

supply of broodstock. Fertilized eggs from these brook trout should be available in three years. Partners include: Ottawa National Forest, Michigan Department of Natural Resources, and Keweenaw Bay Indian Community (Natural Resources Department). *9/7/99*

Four Million Sea Lampreys Destroyed, Great Lakes Fish Saved

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. Since mid-July 1999, two Lake Superior, three Lake Michigan and two Lake Huron tributaries to the Great Lakes have been treated with lampricide, destroying more than four million (about 4,412,000) larval sea lampreys. Included in this total are about 41,200 larvae that would have transformed into the parasitic phase and entered the Great Lakes this year. Each parasitic phase sea lamprey is capable of killing upwards of 40 pounds of fish during the year long parasitic phase of its life cycle. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4 billion. *9/8/99*

Lake Superior Ecosystem Cooperative Provides International Impetus For Coastal Wetland Protection

Ashland Fishery Resources Office

The Lake Superior Ecosystem Cooperative, formed in 1989, is a forum for state, federal, Canadian, tribal, and academic institutions to share information about ecosystem issues. Currently chaired by the Service, the Cooperative met twice in Fiscal Year 1999, focusing on coastal wetland protection and the effects of land use on stream flow. The Cooperative is also active in developing GIS capabilities; planning terrestrial wildlife communities of the future; and researching changing land use in the Lake Superior basin. The Lake Superior Ecosystem Cooperative has fostered collaboration and information sharing among member agencies and universities for ten years. An example of results is a Lake Superior Basin GIS that is usable and accessible by local governments and the general public, as well as resource professionals. Partners include: National Park Service, U.S. Forest Service, Natural Resources Conservation Service, Minnesota and Wisconsin Departments of Natural Resources, University of Minnesota-Duluth, Northland College, and Lakehead University. *9/9/99*

Service Staff Joins Partners to Collect Round Goby For Research

LaCrosse Fishery Resources Office

Service staff from LaCrosse Fishery Resources Office and Chicago Field Office, joined members of the Illinois Natural History Survey, Perch America and other volunteers to collect approximately 1,600 round goby from Lake Michigan and transport them to LaCrosse, Wis. The goby will be used in toxicity tests to determine the effectiveness of various chemicals on the exotic species. If a chemical can be effective in controlling the exotics, it may be used in conjunction with the electrical barrier being constructed to restrict the range of gobies on the Chicago waterway. Partners include: Illinois Natural History Survey, U.S. Army Corps of Engineers, Genoa National Fish Hatchery, Perch America and individual volunteers. *9/9/99*

Service Partners With Lake Huron Fishermen For Lake Sturgeon Survey

Alpena Fishery Resources Office

Biologist Tracy Hill and Biological Science Technician Scott Koproski of the Alpena Fishery Resources Office (FRO) traveled to the Saginaw Bay Area of Lake Huron in early September to visit commercial fishers assisting the Service in its study of lake sturgeon. Lake sturgeon are captured by the fishers in their trap net fishery. When a lake sturgeon is captured, the fishers collect biological data and apply an external tag to the fish before returning it to the lake. The Alpena FRO staff resupplied the fishers with materials needed to collect information from the lake sturgeon. Nine fishers were visited and information was gathered on 20 additional lake sturgeon, four fish had be previously captured and tagged. This brings the total number of lake sturgeon encountered in 1999 to 23; total for the five years of the project is 152. This international, multi-agency lake sturgeon project is being coordinated by the Alpena FRO, which is involved with lake sturgeon projects on Lake Huron, Lake

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Erie and the St. Clair Waterway. The objectives are to gather crucial information on lake sturgeon population status, early life history, hahitat use and interbasin movement among the lakes. Information will be used to develop restoration plans for lake sturgeon in the Great Lakes. The tagging effort in the Saginaw Bay area of Lake Huron brings the total number of lake sturgeon tagged by this work to approximately 3,000 fish.
Partners include: Barbeaux Fishery, Bay Port Fish Company, Beardsley Fish Company, Beers Fishery, Cedarville Fish Company, Gauthier-Spaulding Fishery, Lentz Fishery, Lixey Fish Company, M&W Fish Company, Serafin Fishery, and Whytes Fishery, Michigan Department of Natural Resources, Ontario Ministry of Natural Resources-Lake Huron Management Unit, and Ohio Division of Wildlife. *9/9/99*

Juvenile Walleye Assessment Assistance to COFTMA-ITFAP
Alpena Fishery Resources Office
Alpena FRO provided assistance to the Chippewa-Ottawa Treaty Fishery Management Authority - Inter-tribal Fishery Assessment Program (COFTMA-ITFAP)with nighttime electrofishing surveys for juvenile walleye in treaty-ceded waters of Lakes Huron and Superior the week of September 13th. Alpena provided an electrofishing boat and operator for surveys which were conducted in Munuscong Bay in the St. Mary's River, Waiska Bay in Lake Superior, and St. Martin's Bay in Lake Huron. Low water levels prevented sampling of Epoufette Bay on Lake Michigan. Alpena FRO has assisted with the annual juvenile walleye assessment since 1993. *9/17/99*

Service and Grand Portage Tribe Complete Coaster Brook Trout Habitat Use Study
Ashland Fishery Resources Office
The Ashland Office of Fishery Resources Office (FRO) in cooperation with the Grand Portage Tribal Natural Resources Department completed a study of the movement, distribution and habitat use of the unique, giant "coaster" brook trout of Lake Superior in September 1999. Once abundant and widespread in the lake, coasters were nearly extirpated in the 1800's, and today exist only in the form of a few tiny, remnant populations. Ashland FRO and the Grand Portage Tribal Government have initiated research and experimental reintroduction projects that are directed at rehabilitating viable populations. In an effort to learn more about learn more about coasters and their home ranges, a research project was completed in 1999 describing the movement of coasters in Lake Superior and in the streams where they were stocked as eggs or fry. A report titled; "Defining Habitat Use And Movement Patterns Of A Reintroduced Coaster Brook Trout Population In Lake Superior" presents the results of the cooperative study. Biotelemetry was used to determine home ranges, movement patterns and characteristics of the habitat used by 18 coaster brook trout *(Salvelinus fontinalis)* in Lake Superior and tributary streams. Transmitters were designed and uniquely programmed for this application, and were surgically implanted in sub-adult or pre-spawn fish ranging from 282 mm to 467 mm in length. Locations were monitored for up to 19 months. The maximum distances from release point recorded for individuals ranged from 1.66 km to 31.58 km. (Mean=6.06 km). All daytime fish locations recorded were at depths less than seven meters or within 150 meters of shore. Coasters often established and used a single microhabitat of cover (a single rock, dock or crib) during peak daylight hours. Some individuals used the same microhabitat on a daily basis for weeks or months. Coasters typically left daytime cover habitats in the evening and moved more actively through the night. Age 3 coasters with functioning transmitters entered streams where fry stocking had occurred during October or November. The information produced by the study is highly relevant to coaster brook trout reintroduction efforts in the Lake Superior basin as it provides an indication of the ranges of motion and the habitat use that could be expected when populations are reintroduced to historic habitats. The report is available from Ashland FRO and a modified version is being edited for inclusion in the symposium proceedings of the 15th. International Symposium on Biotelemetry, Juneau, AK. May, 1999. Partners include: Grand Portage Natural Resources Department, Ontario

ministry of Natural Resources, The Northwest Area Foundation. *9/10/99*

LaCrosse Staff Harvest Walley Fingerlings at Rydell NWR
LaCrosse Fishery Resources Office
Staff from LaCrosse Fishery Resources Office helped harvest more than 4,500 large (eight to 10-inch) walleye fingerlings from Rydell National Wildlife Refuge for stocking into waters on the Red Lake Reservation (Minnesota) and Desoto NWR. Approximately 2,000 fish were sent to Desoto NWR, meeting their request for this year. The remainder were stocked into a small lake on the Red Lake Reservation. Both stockings help provide increased recreational fishing opportunities. *9/15/99*

Midwest's Federal Resource Managers Focus on Saginaw Bay and River
Alpena Fishery Resources Office
A meeting of federal agency representatives to the Midwest Natural Resource Group's Saginaw Bay/River Focus Area was held in East Lansing, Mich., Sept. 15, 1999. The meeting familiarized participants with ongoing agency specific activities within the Saginaw Bay watershed and to begin discussions about potential collaboration for on-the-ground projects. The Service is the lead agency for this focus area and the meeting was organized by Jerry McClain of the Service's Alpena Fishery Resources Office. Agencies participating include: Natural Resources Conservation Service, National Park Service, National Oceanic and Atmospheric Administration (Great Lakes Environmental Research Laboratory, Corps of Engineers, U.S. Geological Survey (Great Lakes Science Center), and the Service. Members of the focus area will meet in Lake Geneva, Wis., in November to begin discussing potential on-the-ground activities and provide a report to the Midwest Natural Resource Group. *9/15/99*

91,000 Coaster Brook Trout Fingerlings Returned to Ancestral Waters
Ashland Fishery Resources Office
Restoration of a depleted population of Lake Superior coaster brook trout received a boost in September 1999 when the Service stocked 91,000 fingerlings into waters of Siskiwit Bay, Isle Royale, Mich. The stocking project was a cooperative effort between two Department of Interior agencies, the U.S. Fish and Wildlife Service and National Park Service. The inter-agency cooperation was vital to the success of the project, which required multiple methods of transportion during the 16 hour trip from hatchery to release points. The fingerlings stocked are progeny of Siskiwit Bay strain coaster brook trout being reared for broodstock at Iron River National Fish Hatchery. All 91,000 fish stocked were marked with a fin clip and 7,500 received a coded wire tag inserted into the snout. The Brook Trout Rehabilitation Plan for Lake Superior set objectives for self-sustaining populations of coaster brook trout. Currently, these objectives are not being met for the Siskiwit Bay population. The return of Siskiwit Bay strain fingerlings to their ancestral waters is one step toward rehabilitation of this population and attainment of population objectives. Fingerlings were stocked over a 10 mile stretch of shoreline and into two tributaries to Siskiwit Bay. Recent fishing regulation changes by Michigan DNR and Isle Royale National Park will protect these fish until they reach reproductive size and age. In two-four years these fish will reproduce and help reestablish a self-sustaining coaster brook trout population as outlined in the Rehabilitation Plan. The Brook Trout Rehabilitation Plan for Lake Superior set objectives for self-sustaining populations of coaster brook trout. Currently, these objectives are not being met for the Siskiwit Bay population. The return of Siskiwit Bay strain fingerlings to their ancestral waters is one step toward rehabilitation of this population and attainment of population objectives. *9/16/99*

LaCrosse FRO Studying Effect of River Channel Dredging on Fish
LaCrosse Fishery Resources Office
Staff at LaCrosse Fishery Resources Office (FRO) completed the monthly, and final sampling for Fiscal Year 1999 for a Dredge Placement Project on the Mississippi River's Pool 12. More than 15,000 fish were collected identified, weighed and measured during the year as part of the sampling.The project will help identify impacts to the

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fishery from dredging operations on a main channel site. LaCrosse FRO staff currently have one year of pre-dredging data analyzed and year two sampling is nearly complete. Year one results are similar to the previous year; indicating very little difference in abundance or diversity between control and dredge sites The U.S. Army Corps of Engineers proposes placing dredge material on the site in October. After dredging is conducted we will monitor the fishery impacts for a minimum of two years. *9/17/99*

Service Seek Continued Work With Fish Isolation Facility at Keweenaw Bay

Ashland Fishery Resources Office

The Ashland Fishery Resources Office (FRO) is conducting lengthy discussions detailing a renewed fish isolation agreement with the Keweenaw Bay Indian Community. This agreement fosters the continued integration of fish health and fish genetics into the Service's NFH captive broodstock program. The Service needs disease-free broodstocks that represent the genetics of wild fish. The Keweenaw Bay Indian Fish Hatchery first initiated a two-year cooperative program with the Service in September 1995 and renewed it again in 1997. During this period the Community has successfully reared healthy lake trout and brook trout through the required disease clearance period which included several fish health inspections. The yearlings that were being held in isolation were given the very best of care and now that a pathogen-free disease history has been established, they can be safely used for further egg production and the subsequent fingerlings will then be used to meet restoration stocking efforts throughout the Great Lakes basin. *9/24/99*

Ashland Helps Stock Brook Trout, Conduct Surveys at Keweenaw Bay

Ashland Fishery Resources Office

Sportsmen from the Lake Superior basin will soon benefit from a recent collection of juvenile (two- to four- inch) brook trout from the Jumbo River in Michigan's Houghton county. Personnel from the Ashland Fishery Resources Office, Ottawa National Forest, Michigan Department of Natural Resources, and Keweenaw Bay Indian Community (Natural Resources Department) recently collected more than 600 brook trout and transferred them to the Keweenaw Bay Indian Fish Hatchery. The project was conceived by the Keweenaw Bay Indian Community as a means to stimulate the brook trout recovery program for the Keweenaw Bay area. These trout will be utilized, along with fish from a similar collection in 1997, to initiate a new strain of brook trout broodstock that will be reared at the Keweenaw Bay tribal fish hatchery. This wild trout collection/rearing program was initiated to increase the survivability and number of the stocked fish by providing for the release of a more aggressive (wild) hatchery reared fish. Ashland FRO staff also assisted the Keweenaw Bay Indian Community (KBIC) with inland stream surveys at eight locations. The focus of these assessments were to document the presence and relative abundance of trout species as part of brook trout enhancement program by the Keweenaw Bay Natural Resources Department. During this same period, I also conducted a lake survey on Laws Lake. This information is all used by the KBIC to monitor these fisheries resources and determine management options. Partners include: Keweenaw Bay Indian Community *9/24/99*

LaCrosse FRO Continues to Monitor Fish Species of Concern

LaCrosse Fishery Resources Office

Staff at LaCrosse Fishery Resources Office (FRO) continued to monitor interjurisdictional fish species of Special Concern through Fiscal Year 1999. Sampling efforts collected adult paddlefish and lake sturgeon in the Wisconsin, Chippewa, Minnesota, and Mississippi Rivers. Larval samples were collected on the Chippewa River. Seventy-eight paddlefish were newly tagged and 30 were recaptured from previous tagging efforts, some as far back as 1993. Of the 64 lake sturgeon captured, six were recaptures. One lake sturgeon originally tagged in Pool 5A of the Mississippi River in 1995 was recaptured by hook and line two times in the same week in Pool 10. Paddlefish and lake sturgeon were the target species of the sampling efforts, but this year was the first time blue sucker were also collected. In April 1999, 20 blue suckers with free flowing eggs and milt were

captured in the Wisconsin River near Prairie du Sac, Wis. The blue sucker is listed as a Threatened Species by the Wisconsin Department of Natural Resources and is a federal species of special concern. Collecting spawning blue sucker in the sampling area further documents the importance of this habitat for numerous fish populations. The additional tag data collected on paddlefish has been added to the FRO's extensive paddlefish tag database and will enable thorough and continued assessment of this species' population status. The lake sturgeon tag database is in its infancy and will require additional efforts to enable assessment of lake sturgeon population status. LaCrosse FRO is gearing up to initiate a mark-recapture study on blue sucker for Fiscal Year 2000. Partners include: Minnesota DNR, Wisconsin DNR, USGS-BRD La Crosse. *9/28/99*

Hatchery Workgroup Seeks to Maximize Nation's Hatchery's

Ashland Fishery Resources Office

Frank Stone of the Service's Ashland Fishery Resources Office (FRO) attended a National Fish Hatchery (NFH) System Workshop in Bozeman Montana. The Service is developing a long-term vision and strategic plan for the National Fish Hatchery System. The workgroup was charged with developing guidelines that will assist the Service in its effort to maximize the full potential of the hatchery system while still meeting its responsibilities to stakeholders. The meeting focused on how the Service is interacting with Tribal fish stocking programs and how the Service's new policy of native fish stocking/restoration will be applied to Tribal programs. The group is composed of 14 staff members from five Service regions. The committee established Service roles in six key areas: General Guidelines, Trust Responsibility, Trust Resources, Current Level of Trust Responsibility, Options for Cost Recovery and Future Involvement. The first draft of the report will be prepared by team leader Ron Skates (Region 6) and should be received for review by the other team members on Oct. 8, 1999. The final report is due March 1, 2000. *9/29/99*

Ecoysystem Team Monitors Zebra Mussels Along 1,000 Miles of Ohio River

Carterville Fishery Resources Office

More than 40 people from five states, numerous volunteers and two federal agencies (U.S. Geological Survey and and Environmental Protection Agency) pitched in to conduct surveys at 11 sites along the 1,000 mile Ohio River. The river-wide assessment tracked the status of zebra mussels and their impacts on native mussels throughout the river, and rescued endangered mussels that are at-risk. Zebra mussels now inhabit the entire length of the Ohio river, and native mussels are declining in areas—primarily in reaches below Cincinnati, Ohio—since the early 1990s. Zebra mussel populations continue to build in the upper river. Participating partners in the survey include 11 Service field offices: Ohio River Islands NWR, Erie NWR, Muscatatuck NWR, Canaan Valley NWR, White Sulphur Springs NFH, Patoka River NWR, Carterville FRO, Reynoldsburg Field Office, Bloomington ES, Region 5 Regional Office, and Special Agent for West Virginia. *9/30/99*

New Poster Features Ohio River Freshwater Mussels

Carterville Fishery Resources Office

The Mollusk Sub-Group of the Ohio River Valley Ecosystem Team formed a committee last year to develop and produce an educational poster highlighting the mussels of the mainstem Ohio River. The committee is chaired by Wayne Davis of the Kentucky Dept. of Fish and Wildlife Resources, and involves all six states and bordering the Ohio River as wells as three federal agencies (USFWS, TVA, USGS). The full-color poster features native mussels of the Ohio River, including federally listed and extinct species, with important conservation information on the back, in black and white text and photos. The Service is a cost sponsor, along with the states and the Mussel Mitigation Trust. The poster is in final design phase now, and should be published by February 2000. Partners include: Resource Managment Agencies of Kentucky, West Virginia, Ohio, Illinois, Pennsylvania and Indiana, Tennessee Valley Authority and U.S. Geological Survey. *9/30/99*

$1 Million Will Help Ohio River Valley Ecosystem Team Save Native Mussels

Carterville Fishery Resources Office

As a result of a settlement with a commercial shell company for alleged violations of federal and state law, the Service and the National Fish and Wildlife Foundation are administering a fund that will provide $1 million over four years to enhance and protect freshwater mussel resources. This represents a major infusion of money dedicated solely to freshwater mussel research and management needs. Members of the Ohio River Valley Ecosystem Team's Mollusk Sub-Group developed the proposal format and review criteria and established a 10-member review committee. The group also developed a process for soliciting and reviewing proposals. The first call for proposals went out in September and the first round of funded projects will be announced in December 1999. Approximately $100,000 to $150,000 will be awarded this first round. The Ohio Valley Ecoystem Team's Native Mussel Sub-Group is soliciting proposals from a wide variety of potential partners. *9/30/99*

Lake Huron Ruffe Collected for USGS Study

Alpena Fishery Resources Office

Alpena Fishery Resources Office staff collected live Eurasian ruffe from the Thunder Bay River, Lake Huron in September for a study being conducted by the USGS-BRD Great Lakes Sciences Center in Ann Arbor, Michigan. The study will document interactions between ruffe and round goby under laboratory conditions. More than 150 live ruffe were collected with bottom trawling gear for the study currently underway at the Science Center. Partners include: USGS-BRD and Great Lakes Sciences Center. *9/30/99*

Carterville FRO - Big Darby Creek Project Retores Habitat

Carterville Fishery Resources Office

Representatives of the Ohio Department of Natural Resources (Division of Wildlife and DNAP), the Service, Pickaway County Ohio Soil & Water Conservation Office, and landowner Bill Richards have collaborated in the develoment of a riparian zone restoration and in-stream habitat improvement project on Big Darby Creek in Pickaway County Ohio. This priority project of the Ohio River Valley Ecosystem Team will leverage Service Clean Water Action Plan Funding to restore habitat in Central Ohio. The project will move approximately 3,000 feet of levee back an average of 300 feet from the banks of the Big Darby Creek, restoring approximately 20 additonal acres of riparian corridor. In addition, in-stream kicker devices would be constructed out of local materials to protect stream banks from erosion. Approximately 135 acres of riparian corridor along nearly two miles of Big Darby - will also be protected by conservation easements (WRP and SWCD) donated by the landowner. The total project will cost approximately $90,000 with $55,650 funded by a grant from the Service's Clean Water Action Plan. Partners include: Ohio Department of Natural Resources, Division of Wildlife, Fisheries, Pickaway County Ohio Soil and Water Conservation District, Bill Richards, Private Landowner, Ohio Department of Natural Resources, Division of Natural Areas & Preserves. *9/30/99*

Alpena FRO Increases Awareness of Aquatic Exotics in Lake Huron Area

Alpena Fishery Resources Office

As part of the Service's ongoing effort to educate the public about exotic species in the Great Lakes, Alpena FRO provided educational materials and outreach to businesses, industry, conservation organizations, management organizations, schools, and at public events along the Lake Huron coast in 1999. More than 3,500 Eurasian ruffe and round goby WATCH identification cards and aquatic exotics brochures were provided to 33 bait and license dealers, 21 marinas, 14 businesses, five industries, three charter services, and six area chambers of commerce. Eurasian ruffe identification posters were posted at 23 Lake Huron access sites. Exotics identification presentations and information were given to seven conservation organizations, five management organizational meetings, three school functions, and five public events. Two professional posters on Eurasian ruffe populations in Lake Huron were prepared and presented for public display. Specimens of exotics were provided to nine natural resources agencies for education and identification purposes. Twenty-five anglers, two industries, and two man-

agement agencies contacted our office to report exotic species sightings. One report was a confirmed sighting of round goby in a new location in Lake Huron. One business reported two confirmed new sightings of zebra mussels in tributaries to Lake Huron.Exotics information and outreach provided to Lake Huron businesses, anglers, bait and license dealers, schools, industries, management agencies, and conservation organizations results in a more educated and interested public. They are concerned about natural resources and the effects exotics will have on native fish communities. They can readily distinguish exotic species and know the problems associated with them. They report exotics sightings which assist our efforts to determine exotics range expansion and population characteristics. Public education magnifies our efforts to prevent the spread and detect the presence of exotics in Lake Huron. Partners include: 33 bait and license dealers, 21 marinas, 14 businesses, five industries, three charter services, six chambers of commerce, seven conservation organizations, five management organizations, three schools, five event coordinators, nine natural resources management agencies and numerous anglers. *9/30/99*

Carterville FRO Manages National Paddlefish Database and Coded-Wire Tag Processing Center

Carterville Fishery Resources Office

The Mississippi Interstate Cooperative Research Association (MICRA) national paddlefish database and an associated coded-wire tag processing center are managed by the Carterville Fishery Resources Office (FRO). During Fiscal Year 1999, the Center processed 5,370 coded-wire reference tags from wild captured fish and 104 reference tags for 52 stockings of 85,492 hatchery reared fish. Coded-wire tags recovered from 281 recaptured paddlefish were processed and linked to release data in the database. At the end of the fiscal year, the database contains individual records for 1.1 million stocked paddlefish, more than 9,000 wild tagged paddlefish and nearly 1,000 tag recoveries. Long and short distance migrations between state management jurisdictions and between important paddlefish habitats have been documented. Individual data summaries were constructed and distributed to participating states. MICRA is comprised of 28 member state natural resource agencies. Twenty-three states contributed to the MICRA paddlefish database. The national study is designed to assess the population status of paddlefish, formulate estimates of harvest and exploitation, and to describe their movement and migration patterns throughout the Mississippi Basin. The project will continue during Fiscal Year 2000. Partners include: Blind Pony NFH; Carbon Hill NFH; Centerton NFH; Garrison Dam NFH; Gavins Point NFH; Mammoth Spring NFH; Natchitoches NFH; Neosho NFH; Private John Allen NFH; Tishmingo NFH; Uvalde NFH; Alabama, Arkansas and North Dakota Divisions of Game & Fish; Minnesota, Iowa, Illinois, Indiana, Ohio, Wisconsin and West Virginia Departments of Natural Resources; Kansas Department of Wildlife & Parks; Kentucky Department of Fish & Wildlife, Louisianna Department of Wildlife & Fisheries; Mississippi and Montana Departments of Wildlife, Fish, & Parks; Missouri Department of Conservation; Nebraska Game & Parks Commission; New York Department of Environmental Conservation; Oklahoma Department of Wildlife Conservation; Pennsylvania Fish & Boat Commission; South Dakota Department of Game, Fish, & Parks; Tennessee Wildlife Resources Agency and Texas Parks & Wildlife Department. *9/30/99*

Ohio River Ecosystem Team Studies the Importance of Reclaimed Stripmine Lands to Migratory Birds

Carterville Fishery Resources Office

The Ohio River Valley Ecosystem Team (ORVE) Migratory Bird Subgroup funded and initiated a two year study of the productivity of grassland birds on reclaimed surface mine sites in the ORVE. The subgroup again partnered with Indiana State University researchers who have been studying the use of these large anthropogenic

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grasslands for several years. The MBS reviewed data indicating that these sites indeed provide habitat for a variety of grassland dependent birds including species identified as area sensitive. What is unknown is do these sites, which are structurally similar to but floristically unlike native grasslands, act as a source or a sink with respect to grassland birds. *9/30/99*

Great Lakes Streams Surveyed for Sea Lampreys

Ludington Biological Station

The Service conducts a sea lamprey control program under contract with the Great Lakes Fishery Commission. From mid-July 1999 through September 30, 1999 larval assessment surveys were conducted on 10 Lake Superior, 16 Lake Michigan and 12 Lake Huron tributaries, and 2 Lake Superior lentic areas. Surveys were conducted to prepare streams for lampricide application in 1999, rank streams for lampricide application in 2000, evaluate the status of larval populations in streams that may be ranked for lampricide application in 2000 and 2001, search for new infestations, evaluate lampricide applications or to collect biological specimens. In addition, staff continued to work on draft manuscripts for the Sea Lamprey International Symposium II scheduled to be held in Sault Ste. Marie, Ontario, August 2000. The successful sea lamprey control program continues to ensure sport fish rehabilitation in the Great Lakes and protect a fishery valued at over $4.0 billion. *9/30/99*

Ohio River Valley Ecosystem Team Completes Ecosystem Level Migratory Bird GIS System

Carterville Fishery Resources Office

The Migratory Bird Subgroup (MBS) of the Ohio River Valley Ecosystem Team (ORVE), in cooperation with Indiana State University's Remote Sensing Laboratory, completed transfer of ORVE migratory bird data to a geographic information system (GIS). The system includes a seamless landcover map for the entire ORVE, ecosytem and county boundaries, major rivers and streams, BBS routes, digital raster graphics, and other data layers. Using the GIS we preliminarily identified major forest and grassland blocks in several size classes throughout the ecosystem. Partners include: Indiana State University and Cookeville, Tenn. Field Office (Region 4). *9/30/99*

Carterville FRO Assists With Ohio River Mussel Monitoring

Carterville Fishery Resources Office

During Fiscal Year 1999, Carterville Fishery Resources Office (FRO) supported the Ohio River Island National Wildlife Refuge with equipment and a biologist for surveying mussel beds on the lower Ohio River. This is the third year the Carterville FRO has supported the project. The study examined and monitored the population status, abundance, and interaction of native and zebra mussel populations throughout the Ohio River. By assisting in the surveys, Carterville staff acquire a better understanding of the aquatic environment of the Ohio River, and gain experience through the large-scale mussel study. Biological skills and knowledge obtained enhance the Carterville staffs ability to work within large river ecosystems. *9/30/99*

Volunteer Program Benefits Students and Service Work Carterville FRO

Carterville Fishery Resources Office

The Carterville Fishery Resource Office (FRO) is participating in a student volunteer program with Southern Illinois University, Carbondale, Ill. The program provides students the opportunity to simultaneously obtain work experience and school credit. Mike Thomas, a SIU biological science graduate, has participated in the program during the summer and fall of 1999, logging more than 560 hours providing valuable technical assistance with reports and sampling. The program benefits both the Service and the students with the Carterville FRO receiving essential help, and Mike acquiring practical work experience. *9/30/99*

Fish Collected From Thunder Bay and Lake Huron For Contaminant Sampling

Alpena Fishery Resources Office

Alpena Fishery Resources Office (FRO) collected carp and young-of-the-year yellow perch from Thunder Bay, Lake Huron for contaminant analysis studies being conducted by the Michigan Department of Environmental Quality (DEQ). Carp were collected during the spring with electro-fishing gear and yellow perch were collected in the fall with bottom trawling gear. The DEQ monitors Thunder Bay fish for contaminants and the fish samples will contribute to trend information on contaminants in the area. *9/30/99*

Eurasian Ruffe Control Continues Under Service Leadership

Ashland Fishery Resources Office

Led by the Service fisheries offices, control of the exotic nuisance fish, the Eurasion ruffe, continued through 1999. The control program, approved by the national Aquatic Nuisance Species Task Force, prevents spread of the species from western Lake Superior. Intensive surveillance shows the range of ruffe has not expanded significantly since 1995. The aggressive ruffe outcompete native fishes for habitat. By preventing or delaying the spread of ruffe, the Ruffe Control Program has prevented degradation of valuable fisheries in Lake Erie, Saginaw Bay, and other areas in the Great Lakes, and other waters where ruffe would colonize if control were not effective. Cooperators in the control program include several state, federal, Canadian, and tribal agencies, as well as the shipping, live bait, and sport fishing industries. The Ruffe Control Committee, chaired by the Service, meets annually in October to review progress and current issues. Partners include: Partners in ruffe control are too numerous to mention, but include USGS-Biological Resources Division, U.S. Coast Guard, Great Lakes Sea Grant network, several state agencies, Lake Carriers' Association, Great Lakes Sport Fishing Council, and Michigan Bait Dealers Association. *9/30/99*